GAS JOURNAL, APRIL 19, 1939

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Editorial Notes

Gas in Leven

IN 1931 Mr. H. A. Aitken read a Paper at a meeting of the North British Association of Gas Managers on amalgamation and centralization, with particular reference to his own undertaking, the Buckhaven and Leven. Last Friday, in his Presidential Address to the Association, he outlined the developments which have taken place since that time, and he was able to tell a story of progress, if not spectacular, steady and satisfactory. The Joint Gas Undertakings of the Burghs of Buckhaven and Leven came into being in 1922, when the two existing gas companies which served the district, and which had been compulsorily acquired by the Buckhaven Council, were transferred to joint ownership. The acquisition was a costly one, and a heavy adverse balance on revenue account was incurred during the first year of municipal control, due to the coal stoppage. The loan debt was excessive, and the money had been borrowed at a high rate of interest. Also, the state of the manufacturing plant and of the mains demanded the immediate expenditure of a large sum to enable the undertaking to cope with the existing load, apart from providing for the increasing requirements of a rapidly developing area. The first objective of the Joint Board was to eliminate the loss on revenue account, and this, with a price for gas of 7s. 1d. per 1,000 cu.ft., was practically accomplished in a year.

In his Address last Friday Mr. Aitken compared the present position of the undertaking with that which obtained in 1922, and the figures he set out show what solid progress has been made. Sales of gas have grown from 81 million cu.ft. in 1922 to 165 millions; the outstanding debt has been reduced from £1,173 per million cu.ft. of gas sold to £517; the price of gas has been reduced to 3s. 3d. per 1,000 cu.ft. In 1931 we wrote in the "JOURNAL": "When one studies what Mr. Aitken is doing in regard to showrooms, publicity, and general district work, one can have few qualms about whether the Buckhaven and Leven Undertaking is likely to flourish in years to come." Mr. Aitken's Presidential Address showed how well justified was this belief.

The first part of Mr. Aitken's Address was confined to his undertaking—to the extensions made to the carbonizing plant, to the addition of new purifiers and station meter, to mains extensions, and to the progress made in the sales of appliances. In the second part Mr. Aitken reviewed several matters which are engaging the attention of members of the Gas Industry at the present time. Among them amalgamation and grouping, obsolescence of plant in relation to income-tax, valuation of plant for rating purposes, and the incidence of increased coal prices. Especially interesting to us were his remarks on coke sales and the inter-competition between gas undertakings to the detriment of all. He shares our view that the establishment of a coke association in Scotland for the purpose of regulating and controlling the sale of coke along the lines of those in operation in England, with co-ordination through a national organization, is highly desirable. His comments on education were much to the point. Those in responsible positions in the Gas Industry must see it to that students who have prepared themselves for responsibility are suitably rewarded for their efforts and enthusiasm, and given preference when appropriate openings occur. In this regard Mr. Aitken referred to the very valuable William Young Memorial Lecture delivered by Sir Frederick West to the North British Association last September. The Gas Industry must attract to its ranks young men of high character and intellectual capacity. The Gas Industry, more at the present time than ever before, needs trained and active brains and ability, but it will not get them unless it is prepared to pay for them. If it is not so prepared, it will in the long run pay dearly. The Industry will obviously fail to attract the right type of man if the remuneration offered is so meagre as to be almost an insult to his intelligence.

A Central Laboratory

IN a letter which we published in the "JOURNAL" last week Mr. G. M. Gill raised anew the question of the establishment of a central testing laboratory, strongly advocating such a course. He based his argument on the success of the Central Testing Laboratory of the American Gas Association, and, having made seven trips to the United States, during all of which he travelled extensively, he is peculiarly well placed to judge of this success. At present, he said, managers of gas undertakings in this country have no means of knowing whether the appliances which are offered them are of proper design and construction for the public. They have not the

requisite facilities, special experience, or funds to make the necessary tests. Any manufacturer, he argued, can turn out appliances which are quite unsuitable for use by the public, and this state of affairs can only bring discredit upon the Gas Industry. What is needed is a laboratory on the lines of that of the A.G.A., acting for the whole Industry.

In view of Mr. Gill's particular experience both of American conditions and of the working of the smaller gas undertakings in this country, his advocacy on this subject is decidedly interesting. It is as well, however, to recall that the question has been raised and discussed many times during the past twenty years, and we think that the opinion generally held is that the setting-up of a central laboratory in Britain is unnecessary. The whole matter has certainly been closely investigated by both the supply and the manufacturing sides of the Industry. It will be recalled that it was the subject of a Paper by Mr. Lacey and Mr. Masterman to The Institution of Gas Engineers in 1935, following the Institution's visit to the United States. These Authors maintained that the establishment of national testing laboratories was forced upon other countries. It was the only way in which to safeguard the public and to ensure safety and efficiency of gas appliances—the only way because gas undertakings in those countries, unlike those in Great Britain, do not control the supply and installation of gas appliances. They stated that the technical standards accepted under the various systems operating in other countries were not in advance of those obtaining in Great Britain.

Against the establishment of a central testing laboratory it was argued that it might prejudice progress and cause design to work down to a minimum limit, and that reliance on certification might diminish the responsibility of gas undertakings to the public. Again, it was suggested that the adoption of an official label or seal of approval, by which it might be intended only to show fulfilment of a minimum standard, would tend to convey to the public the impression that all appliances bearing the stamp were of equal merit. An official stamp might also be accepted by the public as an unqualified guarantee, while in fact it could only infer that the appliance bearing it would fulfil the standard when new and when properly installed.

In August last the American Gas Industry brought out the "Certified Performance Range." We referred to this special cooker in the "JOURNAL" at the time. Shortly before the launching of the extensive national advertising campaign for the cooker, Mr. Sellman, Chairman of the A.G.A. Special Committee for Improving Domestic Appliances, explained in the *Gas Age* what was implied by the new move. He referred to suggestions which had been made to the effect that the A.G.A. Laboratory should establish a series of standards, such as good, better, and best, and explained that such suggestions had been rejected, for the Laboratory would quickly have got into difficulties had it attempted to evaluate appliances on any comparative basis. He said it was evident that the Blue Star Seal of Approval, representing as it did compliance with minimum standards, had failed to be of any merchandizing value for advertising or campaign purposes. Something new, therefore, had to be developed; and this led to the Certified Performance Range.

In his letter Mr. Gill said that the problem of testing can be dealt with by a few large gas undertakings in this country —notably the Gas Light and Coke Company with Watson House. Of course, Watson House has proved of outstanding value. But, as Mr. Masterman pointed out in the discussion on the Papers printed last month at the Joint Gas Conference in Birmingham, the primary purpose of the Laboratories is to act as a link between manufacturer of appliances and consumer; and this a central laboratory could not hope to do. Would the needs which Mr. Gill feels should be met by the setting-up of a central testing laboratory be better met by the establishment of a few regional laboratories serving the same purpose as Watson House, and—what, of course, is essential—working to an agreed code of testing? Lack of co-ordination in methods of testing has been a great weakness in the Gas Industry. The regional laboratories we envisage would avoid the drawbacks of over-centralization while affording the smaller undertakings all the facilities they might require in the way of testing of appliances.

Floodlighting

THE National Fitness Council for England and Wales has published, at the modest price of 2d., a very useful booklet on the floodlighting of playgrounds and playing fields. As yet there has been in this country comparatively little floodlighting, but it has been amply demonstrated that gas is eminently fitted for the purpose. There are some excellent photographs of gas floodlighting in the booklet, and they should prove a source of encouragement to those concerned with this obviously desirable movement. A large part of the population of any town is at work all day and has time to play games only in the evening. Under present conditions those who wish to play games in winter are compelled to do so at the week-ends, and then there are not enough grounds to go round.

Floodlit playgrounds and playing fields provide recreation which is at once cheap and healthy. It has been suggested that the use of brightly floodlit playgrounds is likely to be injurious to the eyes, but no evidence to justify this fear has been advanced. A second objection is sometimes made on the ground of expense; but the booklet of the National Fitness Council shows quite clearly that there is no more economical means of providing facilities on a similar scale for evening exercise. The possibilities of floodlighting playgrounds and playing fields have not yet been fully realized, but there seems to be every reason why there should be a rapid increase in the use of gas for this purpose. The booklet refers to several gas installations which have been described and illustrated in the "JOURNAL," and the very low running cost of these installations is well brought out. An example is an outdoor bowling green, measuring 120 ft. by 114 ft., successfully lighted by gas at a total hourly consumption of less than 2 therms. Another example given is an indoor bowling green lighted by gas at a consumption of only 1½ therms an hour. Reference, too, is made to the gas floodlit swimming pool at Enfield, the area in this case measuring 1·3 acres. The running cost is less than 1s. 6d. an hour, and the National Fitness Council mentions that, apart from the lighting, the radiant heat given out by the gas lamps is greatly appreciated by the bathers. One of the photographs in the booklet is of the gas floodlit ground of the Saracens Rugby Football Club, described in the "JOURNAL" for March 2 of last year. The running cost of that installation is only 4d. an hour, and the booklet pays tribute to the effectiveness of the lighting.

There is an undoubted need for floodlighted playgrounds, especially in large towns, to extend the time that working people and schoolchildren can give to healthy exercise. We have no doubt that the use of gas for the purpose will increase as its successful application becomes more widely known. The Gas Industry will welcome the booklet of the National Fitness Council as a means to this end. The facts and figures set out show how efficient and economical is

the gas lighting equipment which the manufacturers have made available.

It was not, of course, to be expected that the Council should confine their attention to gas floodlighting. The subject is treated in an unbiased and general manner, and several electrical installations are described and illustrated in the booklet, which is obtainable from H.M. Stationery Office or through any bookseller.

A Fresh Angle

Interest has been aroused in the activities of the National Parliament of Youth, the Council (or Cabinet) of which have lately drawn up Standing Orders, comprising rules and regulations for the guidance of the 500 young "M.P.s" from all parts of Great Britain, who have been holding sessions in London. It is all to the good that those who will be called upon to assist in solving vital problems affecting their country should have the fullest opportunities of interchange of opinion regarding national questions. Thus will they approach their task better equipped than had been their predecessors, who in their younger days did not enjoy the same facilities for expressing their own views—and, what is, perhaps, even more important, for learning the views of their contemporaries. Though responsibility may not cast its shadow upon the debates, and though the arena may not be bound by the fetters of finance, ample benefits are to be anticipated from pointing out what, at any rate, ought to be done, through this formal ventilation of the views of these members of youth organizations from all over the country. It is noted that the time allowed for members' speeches is seven minutes. This should be sufficient for the enunciation of most views, and it may implant a habit which in the future will stand in good stead the speakers—and their audiences. Success to the Youth Parliament!

The "Gasometer"

It has to be confessed that "gasometer" is not a word that has found particular favour with us, even though a dictionary meaning attributed to it may be "a large cylindrical reservoir used at gas-works for the storage of gas—a gasholder." We have rather associated it with "gasometry"—"the science, act, or practice of measuring gases." It may well be, however, that for the future we shall hold the word in warmer regard, for correspondence in the pages of our virile contemporary the *Daily Mirror* has revealed the fact that the town of Northampton is the proud possessor of a public house called "The Gasometer." How, or why, it came to have this name bestowed upon it is not stated. Nor is it easy to understand, as no one seems to have suggested that the word can be associated with the holding or measuring of liquids. But that need not prevent anyone from congratulating this "outcast" from the vocabulary of the gas man upon finding itself in the distinguished company of the "King's Head," the "Castle," and the "Red Lion." Aye, shall not "gasometer" even be taken back into the fold, in order that Northampton's application of the word may be claimed as one more title to fame of our great Industry? There never need be any confusion between this particular "gasometer" and the piece of gas-works plant which the dictionary assigns to the word.

Smokeless Air

We very much like the title which the National Smoke Abatement Society has chosen for its Journal in new form—*Smokeless Air*. And we congratulate the Society on what is unquestionably a great step forward. Many important changes have been made in the Society's publication, and the improvements reflect the growth of the Society, which is now more active and more vigorous than ever before. The new publication is larger than of old and the layout is better and more spacious, and it caters for a much wider range of interest. We wish it all success, and hope that it will bring about all the sooner the end of the smoke age.

The B.C.G.A. Conference at Brighton

The following is the Programme arranged for the 27th Annual Conference of the British Commercial Gas Association to be held in Brighton from April 22 to 25 under the Presidency of Mr. A. M. PADDON, M.Inst.C.E. (Chairman of the Brighton Hove and Worthing Gas Company).

Saturday, April 22.

3. o p.m. to 5. o p.m. — The President and Mrs. A. M. Paddon will be At Home to Conference Delegates and Ladies at The Hotel Metropole, Brighton.

8. o p.m. to 8.30 p.m. — Reception at the Royal Pavilion of Conference Delegates and Ladies by the Mayor and Mayoress of Brighton, followed by cards, music, and dancing until midnight.

Sunday, April 23.

Golf.— By courtesy of the Club Committees, Conference Delegates and their Ladies will be cordially welcomed to play on the following courses:

*Dyke Golf Club.
*East Brighton Golf Club.
West Hove Golf Club.

* Reduced Green Fees.

2.15 p.m. or 2.30 p.m. — Visit of Delegates and Ladies to the Glyndebourne Opera House at the invitation of the Brighton Hove and Worthing Gas Company.

Coaches will leave the Royal Pavilion at 2.30 p.m., and the return journey will be made at 6.45 p.m., arriving in Brighton at 7.30.

Monday, April 24.

10. o a.m. — Welcome to Delegates by the Mayor of Brighton at the Dome.

Presidential Address by Mr. A. M. Paddon.

Address by Sir Harold Hartley, C.B.E., M.C., F.R.S., on "The Conservation of the Nation's Resources," to be followed by discussion.

12.45 p.m. or 1. o p.m. — Official Luncheon for Delegates and Ladies at the Corn Exchange (Church Street Entrance).

2.45 p.m. — Address by Mr. R. J. Rogers on "Some Further Aspects of the Retention and Development of the Domestic Load," followed by discussion (in Private Session).

4. o p.m. — Adjournment for tea and discussion on the Association's activities.

7.15 p.m. for 7.45 p.m. — Banquet at the Corn Exchange to the Conference Delegate by the Chairman and Directors of the Brighton Hove and Worthing Gas Company.

2.15 p.m. for 2.30 p.m. — Tour: "Glimpses of Sussex," arranged for Ladies by invitation of the Brighton Hove and Worthing Gas Company.

Coaches will leave The Royal Pavilion at 2.30 p.m. prompt.

8. o p.m. to 10. o p.m. — Conversazione for Ladies at The Royal Pavilion, given by the Brighton and Hove Branch of the Women's Gas Council.

Reception by Mrs. Clowes, M.B.E., 8.o to 8.30 p.m.

10. o p.m. to Midnight — The Conversazione for Ladies and Banquet for Conference Delegates will be followed by dancing in The Royal Pavilion from approximately 10 o p.m. until midnight.

Tuesday, April 25.

10. o a.m. — Address by Mr. John P. G. Dowman, F.S.S., on "Market Information and Sales Development," followed by discussion,

Address by Lord Horder, G.C.V.O., M.D., B.Sc., Hon.D.C.L., F.R.C.P., followed by discussion opened by Dr. Duncan Forbes, M.B.E., B.Sc., D.P.H., Medical Officer of Health, Brighton.

12.45 p.m. for 1. o p.m. — Official Luncheon for Delegates and Ladies at the Corn Exchange.

2.45 p.m. for 3. o p.m. — Alternative Visits to the Works of—

(1) H. J. Green & Co., Ltd., Foodstuffs and Table Delicacies Manufacturers, Hove.
(2) The Diaphragm and General Leather Company, Portslade.
(3) John Every, Phœnix Iron Works, Lewes.

Coaches will leave The Royal Pavilion at 3.0 p.m. prompt.

The Portslade Works of the Brighton Hove and Worthing Gas Company will be open to inspection during the Conference, and an exhibition of B.C.G.A. work and services will be held in the Corn Exchange.

Personal

ARNOLD E. MOTTRAM

Under the provisions of the Local Government and Other Officers' Superannuation Act, Mr. Arnold E. Mottram has retired from the position of Gas Engineer and Manager to Ossett Corporation after thirty-eight years of strenuous and efficient service.

The son of the late Captain Mottram, of Hyde, Cheshire, he was born in that town and educated at the Grammar School and Arnold House School, Blackpool. He began his career as a pupil of the Engineer and Manager of the Hyde Gas-Works, where he remained for some years, advancing steadily to the position of Assistant Manager.

In 1901 Ossett Corporation bought out the old Company for £114,750, a formidable figure which more than doubled the standing charges. In addition, the plant was old and working at full capacity, the mains small, and the whole distribution system out-of-date. Mr. Mottram became the Corporation's first Manager, and transformed the position by 1902.

In conjunction with the 1902 scheme, at which time only Ossett and Horbury were being supplied, the Corporation exercised their legal rights by extending to Sitlington and Crigglestone.

In 1921 the Corporation took the opportunity of entering into an agreement to purchase gas from the coke ovens at Crigglestone.

Mr. Mottram has been President of the Manchester District Association of Gas Engineers. For sixteen years he represented Yorkshire on the Committee of the National Gas Council in London. We understand that Mr. Mottram, who will shortly be taking up residence in Morecambe district, will for a limited time continue his association with the Undertaking in a consultative capacity.

Staff Presentation.

The employees of the Gas Department have presented Mr. Mottram with a suitably inscribed chromium two-well ink stand, combined with calendar, and an ash tray of golf design (a happy allusion to his favourite pastime) as a token of respect and appreciation of the happy relationships which had always existed between them.

* * *

At a meeting of Renfrew Town Council last week it was intimated that Mr. D. S. MUNN, who has been Gas Engineer and Manager for about a quarter of a century, will retire on Oct. 9.

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In the recent elections, MR. A. E. MATTHEWS, Manager of the General Gas and Electricity Company's Kington Works, was elected a member of the Kington Urban District Council.

Letter to the Editor

"Does Benzole Extraction Pay?"

SIR,—There has been a lot of discussion in the Technical Press recently on this subject.

I should like to ask if showrooms pay, or if it pays to go out for large industrial business, as every appliance sold in the showrooms and every extra load obtained produces what seems to be a bugbear to those who do not advocate benzole extraction—namely, COKE.

Yours, &c.
C. S. SHAPLEY,
Engineer and General Manager.

City of Leeds Gas Department,
April 15, 1939.

The Society of British Gas Industries

Junior Associations' Silver Medal Awards.

The Council of the Society have again this year awarded Silver Medals to each of the Junior Gas Associations for the best Paper adjudged to have been presented during the year by their members at a General Meeting.

A total of 25 Papers were submitted from 8 Associations for adjudication. They were of a very creditable standard.

The following is a list of the awards:

London and Southern District Junior Gas Association.

R. E. L. TENNYSON-D'EYNCOURT .. .. Jan. 18, 1938.
"The Load Value of Appliances as a Guide to Sales Policy."

Midland Junior Gas Association.

W. L. HOWE .. .. April 7, 1938.
"Gas and the Filtration and Heating of Swimming Pools."

Wales and Monmouthshire Junior Gas Association.

N. H. GREENWAY .. .. Nov. 19, 1938.
"Gas in Industry and Commerce."

Western Junior Gas Association.

A. G. HOLTAM .. .. Jan. 22, 1938.
"Rural Gas Service."

Manchester and District Junior Gas Association.

F. BELL .. .. Nov. 16, 1938.
"The Installation of Gas and Steam Equipment in a Municipal Kitchen."

Yorkshire Junior Gas Association.

W. S. HUBBARD .. .. Jan. 15, 1938.
"Choice of Gas Storage."

Scottish Junior Gas Association (Eastern District).

F. B. WALLER .. .. Jan. 7, 1939
"Recovery of Crude Benzole from Vertical Retort Gas."

Scottish Junior Gas Association (Western District).

E. G. SMITH .. .. Feb. 12, 1933.
"Stores Control and Job Costing."

Amalgamation and Grouping

United Kingdom and Ossett.

A communication from the United Kingdom Gas Corporation, Ltd., has been considered by the Ossett Town Council. The communication enquired whether the Corporation desired to sell their Gas Undertaking and set out terms on which the United Kingdom Corporation would be willing to purchase the Undertaking in the event of the Town Council wishing to sell it. Further consideration of the offer was deferred until a report thereon had been submitted to the Council following further communication regarding the terms of the offer.

Forthcoming Engagements

April.

20.—Southern Association (Western District).—Commercial Meeting, Rougemont Hotel, Exeter, 2.30 p.m.
22.—Wales and Monmouthshire Juniors.—Annual General Meeting at Swansea. Paper by Leopold Friedman on "Water Heaters."
22.—Western Juniors.—Annual General Meeting at Bristol.
22-25.—B.C.G.A.—Annual Conference at Brighton.
26.—I.G.E.—Domestic Heating Committee, 2.30 p.m.
26.—Southern Association (Eastern District).—Meeting at Gas Industry House, 2.30 p.m. Discussion on "Breeze Production and Disposal."
27.—I.G.E.—Gas Education Executive Committee, 11 a.m.; Gas Education Committee, 2.30 p.m.
28.—I.G.E.—Specifications Sub-Committee of the Refractory Materials Joint Committee, 2.30 p.m.
29.—I.G.E.—Written Examinations in Gas Engineering (Manufacture).

May.

1.—I.G.E.—Research Executive Committee, 2.30 p.m.
2.—I.G.E.—Finance Committee, 9.30 a.m.; Membership Committee, 10 a.m.; General Purposes Committee, 11 a.m.; Council, 2.30 p.m.
3.—B.C.G.A.—Executive Committee, 2.30 p.m.
5.—North of England Association.—Annual Meeting at Newcastle.
6.—I.G.E.—Written Examinations in Gas Engineering (Supply).
6.—Manchester and District Juniors.—Visit to Higginshaw Gas-Works, Oldham. Paper by F. Cartledge on "Coal and Coke Handling Plant at Higginshaw."
6.—Midland Juniors.—Visit to Coventry Works of Geo. Wilson Gas Meters, Ltd., and to Foleshill Gas-Works.
8.—L.C.C.A.—Technical Committee, 2.30 p.m.
9.—London and Southern Juniors.—Annual Business Meeting.
10.—S.B.G.I.—Council Meeting, 56, Victoria Street, S.W. 1, 11.30 a.m.: Annual Meeting in the afternoon at the May Fair Hotel.
11.—Midland Juniors.—Annual General Meeting. Address by G. Dixon (Nottingham).
13.—Scottish Eastern Juniors.—Annual General Meeting at Edinburgh. Presidential Address of R. Cowie, Jnr. (Hawick).
13.—Yorkshire Juniors.—Meeting at Harrogate. Short Papers by D. C. Gunn, J. W. Stacey, and H. Ramsden.
16.—I.G.E.—Gas Education Executive Committee, 2.30 p.m.
18.—I.G.E.—Joint Committee on Complete Gasification under Pressure, 16, Old Queen Street, S.W. 1.
19.—Southern Association.—Meeting at Devonport.

News of the Week

The Index for the Quarter, January-March, 1939, appears as a supplement to this issue.

Warden's Lass at Leven's next Burgh celebrations will be Miss Rita Burns, daughter of Mr. W. Lindsay Burns, Managing Director of Messrs. Henry Balfour & Co., Ltd., Durie Foundry, Leven.

An Address at the weekly luncheon of Kirkcaldy Rotary Club on April 13 was given by Mr. J. W. Napier, M.B.E., M.Inst.Chem.E., Engineer and Manager, Alloa Gas Department, who took as his subject "The Gas Industry and its Worth."

Because the Gas Company had no Opportunity of Tendering for the street lighting in the whole district, the Broadstairs Urban District Council have referred back a recommendation of their Street Lighting Committee that the tender of the local Electricity Supply Company should be accepted.

The Ministry of Health having considered the application of the St. Helens Gas Department for a loan of £15,000 for improved street lighting, has now sent a copy consent of the loan in the sum of £5,597 for the purpose of the first year's work as per estimate. Estimates will be sent representing the balance of the loan in the two succeeding years. The installations will conform to Group "B" of the Ministry of Transport's Final Report.

The Third and Fourth Installations of Radiant Heaters at Stalybridge were recently set to work and are giving satisfaction. The third installation was for the Stalybridge Gas Mask Store, the temperature specified being not lower than 46° F. This has been secured to date by an average consumption per 24-hour day of 2,100 cu.ft. The cubical content of the building is 18,556 cu.ft. The fourth installation was for a combined workshop and garage, the temperature required being 50° F., but no definite information is available at the moment as far as consumption is concerned.

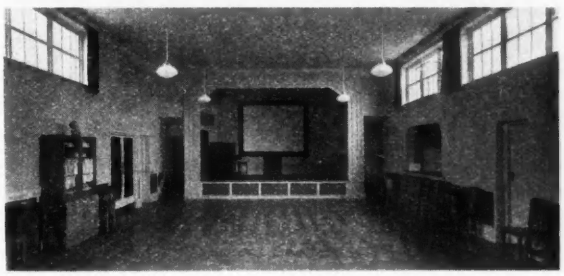
A Proposal to Borrow £22,000 for a new gasholder and a further £8,000 for extensions of mains and services, meters, and cookers, &c., has been discussed by the Hamilton Town Council.

Application for a Special Order, under the Gas Undertakings Acts, 1920 to 1934, is intended to be made to the Board of Trade by the Wellington (Salop) Gas Company with the object *inter alia* of extending the existing area of supply.

In Last Week's Issue we stated that Liverpool's new Roman Catholic Cathedral in Brownlow Hill is to be heated by gas. We are informed, however, that the Cathedral in question is not the one in Brownlow Hill, but the Liverpool Cathedral which is in St. James' Road.

To Stimulate T.A. Recruiting the Directors of the Plymouth and Stonehouse Gas Light and Coke Company state that they have decided that during 1939, and until further notice, all employees belonging to the Territorial Army shall be granted their usual civilian pay while attending camp, up to a maximum of three weeks. In addition they will receive their usual holidays with pay. The Directors express the hope that their announcement will be the means of removing any obstacle which has so far deterred eligible men from enlisting.

Seven Members of the Cambridge Gas Company's Sales and Service staff entered the Area Finals of the Speech Training Competition organized by the British Commercial Gas Salesman's Circles, which were held in the Cambridge Company's Lecture Theatre on April 3. The following took part: Messrs. F. A. Austin, F. Halcrow, S. Halls, C. Hunt, W. D. Robinson, H. R. Stanley, and W. E. Williams. After keen competition it was announced that Mr. Robinson had been adjudged the winner and would compete in the National final, arranged for April 27 in London. The judging was in the hands of Miss M. Francis, of the B.C.G.A., and the Engineer and Manager of the Bury St. Edmunds Gas Company, Mr. H. R. Wimhurst.



Demonstration Theatre.

Gas for New Health Clinic

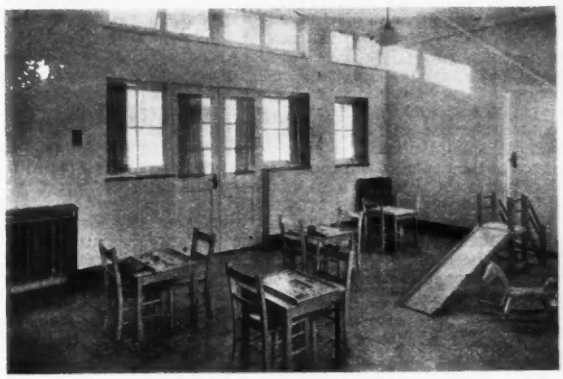
THE new Health Clinic at High Wycombe is designed to form an open courtyard and consists of a main hall provided with a low platform for demonstration purposes, also cinema projector and screen. On one side of the Hall is situated food store and kitchen with offices attached. On the other side of the Hall is a main corridor which communicates with weighing room and waiting room (fitted with cubicles) which opens directly into the Medical Officer's room which is contiguous to the staff room. A play-room for toddlers is provided next to the staff room.

Next to the play-room is a complete Orthopædic Section with X-Ray suite and all auxiliaries required for this important work.

Much credit is due to the officials of the High Wycombe Station of the Uxbridge, Maidenhead, Wycombe, and District Gas Company for the important part played by gas in the provision of heating and cooking, which throughout the building is by gas.

The heating is provided for by 18 two-unit and 18 three-unit Parkinson "Ubic" reflector gas radiators, in order rapidly to heat up the various rooms normally used only for about three separate days each week.

Gas also provides the necessary hot water, and is used for all cooking and demonstration purposes, while points are provided throughout for hotplates and bunsen burners.



Children's Playroom.

This is the second Clinic where the High Wycombe Station of the Gas Company have installed Parkinson "Ubic" radiators, the first being for the High Wycombe Education Committee.

Baltimore Commemorates Founding of First Gas Company

On the occasion of the Annual Convention of the American Chemical Society which opened its sessions in Baltimore, Maryland, on April 3 the inauguration of a chemical industry in America—the manufacture of illuminating gas—through the founding of the first gas company in the United States was commemorated by the unveiling of a tablet on the building of Consolidated Gas Electric Light and Power Company of Balti-

Left to Right.—Dr. John C. Krantz, Professor S. C. Lind, and Mr. Herbert A. Wagner.

more. This Company is the direct descendant of the pioneer American company, which was granted its franchise in 1816. On behalf of the Maryland Section of the American Chemical Society, Dr. John C. Krantz introduced Professor S. C. Lind, President of the American Chemical Society, who unveiled the tablet. In accepting the tablet, Mr. Herbert A. Wagner (President of Consolidated Gas Electric Light and Power Company of Baltimore) on behalf of his Company expressed appreciation of the honour that the American Chemical Society had conferred on the Company.

"Modern Living"

Spring Number

The production of a magazine that is to be circulated among nearly a million homes is an ambitious enterprise, but nothing succeeds like success, and success should follow the production of the new quarterly paper "Modern Living," published by the Gas Light and Coke Company on behalf of the gas companies of London. The "Spring, 1939," issue—the second number of this magazine to be published—is an exceptional and well thought-out venture, and the bright and attractive lay-out and wide variety of interests should appeal at once to the modern housewife. A glance at the contents will show her that the primary motive of the magazine is the desire to abolish the ancient name of "drudgery" so long associated with the activities of a conscientious housewife.

Besides containing many helpful hints and new ideas on the efficient management of the house, the magazine has articles dealing with the social activities of the modern woman, made possible by the possession of labour-saving appliances. There are notes on such a varied range of subjects as knitting, beauty, zoo pets, and interior decoration; recipes by M. Boulestin, as well as a competition with prizes. In addition, as the magazine is intended to satisfy both sides of the domestic hearth, there is an article written specially for husbands by a qualified water engineer on "How much water does your house drink a day?" In quite another vein, Professor John Hilton, of radio fame, writes "A Hint to Husbands," which tells how much can be done to ease the work of the house by efficient planning.

The magazine should prove a valuable link between the Gas Industry and the consumer, and it is point of note that, although the magazine is intended to help the sales of gas, obvious propaganda is lacking. "Modern Living" will, we think, be a popular paper, and shows what can be achieved in the field of journalistic enterprise in the realization of a new idea.

Recent Works Extensions at Croydon

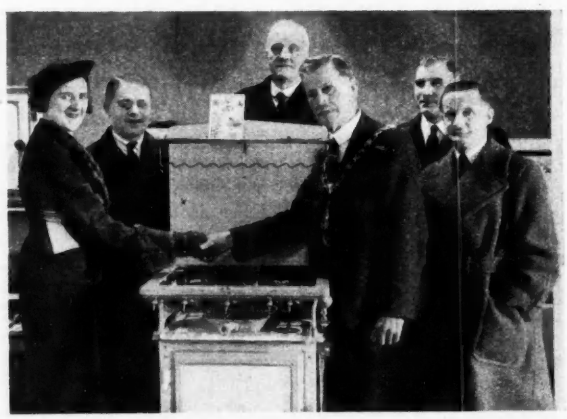
A number of interesting extensions are at present in hand or have lately been completed at the works of the Croydon Gas Company in anticipation of increased output consequent upon the consistent development of the Company's area of supply.

Duplication of the coal-handling plant serving the intermittent vertical retort installation is nearing completion. The previous coal-handling plant was capable of conveniently serving only about 75% of the total requirements of the two intermittent units when working at full load. The new addition, therefore, will not only now fully meet the needs of these two units, but will provide a margin sufficient to cater for another installation of the same size—namely, 3½ million cu.ft. per diem. Provision has been made in the present retort house for such an extension, the foundations and backstays being already in position.

The new coal-handling plant has necessitated the building of a concrete gantry running the whole length of the retort house to carry a second raised railway track parallel with the previous line. On this track a Bennis wagon tippler has been installed, together with electric capstans to facilitate the movement of the wagons. From the tippler the coal passes through Jeffrey crushers and thence by two Babcock & Wilcox bucket elevators to a 500-ton steel bunker at the top of the retort house. The charging stage of the existing retorts has been extended so that the charging car may be fed from the new bunker. The capacity of this further coal-handling plant is 120 tons per hour, and brings the overhead storage up to 1,000 tons—equivalent to about 48 hours' supply.

Another recent addition at the Croydon Works has been the sinking of a second artesian well—370 ft. deep. There is standing water in this well within 10 ft. of the surface, and a pump has been submerged to a depth of about 70 ft., giving a delivery of 30,000 gallons per hour. Water is delivered to an overhead storage tank fitted with a valve to cut out the pumps when the tank becomes full.

An old set of purifiers is in process of being dismantled, and on the same site is to be erected a set of overhead cast-iron boxes of 2½ million cu.ft. per diem capacity on a reinforced concrete frame. At the present price level of scrap iron, we understand that the demolition of the old boxes is proving a not unprofitable proposition.



We referred in the "JOURNAL" a week or two ago to the presentation of a gas cooker to Huddersfield's 50,000th gas consumer. Here we see the actual presentation by the Mayor of Huddersfield. The Chairman of the Gas Committee is standing beside the Mayor, and the Deputy Chairman is behind the cooker. The lady was allowed to choose any cooker in the Showrooms, and she selected a green and cream enamelled Main cooker. The makers, on hearing of her choice, expressed a desire to present the cooker to the Gas Department for this event.

A.R.P. Notes

Fan Units to Combat Panic.

If suitable arrangements are made for drawing fresh air into an air raid shelter the permissible number of occupants can be greatly increased. It is claimed by Messrs. Keith Blackman, Ltd., that "K.B." A.R.P. fans will ensure adequate ventilation for all types of air raid shelters. A plentiful supply of absolutely fresh air for all the occupants will help considerably to relieve the strain on their nerves in an emergency. "K.B." fans are manufactured in various types and sizes to suit all sorts and conditions of air raid shelters. Capacities of these fans range from 5 to 250 cu.ft. per minute with pressures up to 5 in. w.g. running at 1,400 r.p.m. The fans may be operated by hand alone or electricity with emergency hand operation.

AROUND THE GAS STANDS

AT THE

Ideal Home Exhibition

OPINION is as yet somewhat divided as to whether the move from Olympia to Earls Court is having any effect upon the attendances at the 23rd "Daily Mail" Ideal Home Exhibition. Of one thing, however, we can be certain—there is no falling off in the quality of the many attractions designed to draw people from far and wide to this ever-popular home-lovers' Exhibition. Indeed, were it not for the uncertainty of the International situation there is no reason why the new venue should not bring as many as ever to Earls Court—even if only to see the wonders of this fine new exhibition building.

At all events, the building provides full scope for exhibitors to display their goods to excellent effect, and the Gas Industry—as represented by the B.G.F., the Gas Light and Coke Company, and by a number of leading appliance manufacturers—has not been slow to take advantage of this. A series of splendid displays of up-to-date appliances, in settings which exemplify the latest conception of standcraft and sales appeal, put the story of modern gas service across in a most convincing manner.

It is impossible to deal by any means fully with the displays of the gas exhibitors—grouped together in the Household Services Section—but an endeavour has been made in the following pages to give an impression—pictorial and otherwise—of the various stands, with special reference to novel exhibits which demonstrate the domestic applications of gas.

Ascot Gas Water Heaters, Ltd.

It is almost becoming an axiom to say "wherever there are houses there are Ascots"—and it is stimulating to know that this is synonymous with gas. The Ideal Home Exhibition, in its new venue at Earls Court, bears testimony to the continued enterprise of Ascot Gas Water Heaters, Ltd., whose stand is as attractive and original as ever. But that is not all, for out of the total ten show houses which all have gas laid on, no fewer than eight are equipped with "Ascot" gas water heaters, while nearly all the stands in the exhibition using hot water rely on an "Ascot" appliance to supply it.

The "Ascot" stand itself is laid out in a very practical manner without, however, losing sight of the value of decorative presentation. Facing the main gangway and screened from it by a long hedge of beautiful flowers, we found the ever-hospitable tea terrace with illuminated tables and numerous stools where visitors receive "the cup that cheers" made with boiling water from the "Ascot" boiling water appliance. Behind the bar or counter—illuminated by lights cunningly concealed in supporting fins—is a fascinating display of enlarged photographs telling the story of hot water "To-day and yesterday." Two large panels amusingly—but we may hope correctly—show the Victorian kitchen and bath respectively, while alongside under the heading "To-day by Gas," the modern counterpart of each is shown—equipped with an "Ascot" sink heater and bath heater. The hot water lake flanks one side of the stand, "Ascot" sink heaters on fins being one source of supply. An extremely neat method of plumbing and gas fitting to these has enabled the pipe runs to be concealed in each fin, which is only *1 in. thick* (Plumbers and gas fitters please copy!) At the other end of the lake hot showers cascade over a glass fin which shows a photo enlargement of a happy youngster and his boat revelling in water. The showers are fed by two "Ascot" multi-point heaters operating in parallel. The remaining two sides of the stand are used for models of the "Ascot" multi-point, bath, sink, and boiling water appliances operating in their actual or decorative settings, according to the space—but all available for practical demonstration.

The harmonious colouring, good lighting, general finish, and careful design of this stand are well up to the high standard we have come to expect from this firm and their architect, Mr. Rodney Thomas, A.R.I.B.A.; nor can we overlook the importance of it as yet another fillip for gas.

Bratt Colbran, Ltd.

As makers of the well-known "Portcullis" range of gas fires, Bratt Colbran, Ltd., are showing a comprehensive range of their products, with particular attention to the many attractive fireplace settings into which "Portcullis" fires, both independent and inset, fit so naturally. A point is specially made of the new tap which enables the radiant appearance of the fire to be maintained even when the gas rate is lowered. The "Mortimer" radiator indicates the advantages of the radiation-cum-convection type of heater, suitable for halls, while the firm's portable heaters are exemplified in the "Portette" series. For the warming of factories, shops, and public buildings overhead radiant heaters are exhibited in various designs, supported by a range of photographs of recent installations of this character. A fine selection of complete gas fireplaces includes distinctive designs and pleasing colour harmony.

British Gas Federation.

The British Gas Federation are responsible for a popular feature in Mr. Therm's News Theatre. This is a comfortable theatre on the first floor where the Gas Industry presents a continuous programme of interesting and entertaining films. In addition to the latest Gaumont British news reels, changed twice a week, and the ever-popular Mickey Mouse films, several of the

Industry's famous films are being shown, including Paul Rotha's History of the Gas Industry called "New Worlds for Old." In this one can see the world of Queen Victoria with its gas light and gilt, its theatres and gay life, and its parade of great men—Gladstone, Dickens, Disraeli—the great new industries growing up, and the Victorian engineering triumphs which astonished the world. The history tells, too, of the changes which the World War brought in social life, and how the Gas Industry changed as well, providing heat for modern industries, for big restaurants, luxury flats, re-housing schemes, and countless other things. Another film features Henry Hall and his famous Dance Orchestra, playing several of their popular numbers. Altogether this film theatre, capable of seating 500 people, is of considerable propaganda value, and is proving a great draw.

Cannon Iron Foundries, Ltd.

This is an attractive stand which emphasizes the low maintenance costs of modern gas cookers—a feature which necessitates no detraction from the up-to-date conception of stream-lined, all-enamelled, automatic, and labour-saving appliances. The two

principal examples are the firm's "Talbot" and "Henley" cookers—both well-tried models. The latter is particularly easy to maintain, with its lift-off door and readily replaceable panels. The cover-top embodies a simple folding plate-rack, a single movement with one hand sufficing to bring the rack into position, maintaining it rigid and serviceable. On this stand are also to be seen examples of the firm's V-inclined gas fires with automatic lighters; the "Portray" portable heater; the "Beacon" radiator; and the more recent "Wallflower" heater which may be conveniently fitted anywhere on the wall, thus saving valuable floor space. A safety dress guard, easily removable wire element, and a wide range of colour finishes are features of this interesting little appliance, a large-scale photographic reproduction showing it in appropriate setting.

Crane, Ltd.

Of interest to those on the coke side is the stand of Messrs. Crane, Ltd., with its wide range of boilers in pleasing colour finishes and various types of radiator for central heating. Among the latter are several adaptations of the "Crane" concealed radiator, the "Pall Mall" hospital and wall radiator, while towel rails and a selection of valves and malleable iron fittings are also displayed. That this firm do not neglect the gas side is evidenced from their "Carlton" gas-fired boiler also shown.

Electrolux, Ltd.

The manner in which the Gas Industry can cater for the ever-growing refrigeration load may be judged from the comprehensive range of gas refrigerators on the stand of Electrolux, Ltd., while similar appliances are to be seen in almost all of the model houses—to which further reference will be made later.

Ewart & Son, Ltd.

Another firm which is going ahead in the water heating field is Ewart & Son, Ltd., and a comprehensive selection of gas heaters are to be seen on their stand. Two new models are their No. 30 multi-point and single-point. The former has a capacity of 3 gallons per minute raised 40° F., and is attractively finished in white porcelain enamel with chromium-plated fittings. This heater is supplied complete with constant gas governor and easy-access supporting bracket, while other features include white porcelain enamel baffler, chromium-plated gas cock, and thermostatic pilot safety device. The overall height is only 32½ in., while the width and depth are respectively 14 in. and 9 in. The single-point heater has a similar capacity and is supplied in two patterns—open type for hard water districts, and also the sealed type. The firm's well-known "Empire" multi-point heater is, of course, also shown—a gigantic display model forming the centre-piece to the stand, in front of which are three taps which continuously discharge streams of coloured water—red, white, and blue—from no apparent source. Among other heaters shown on this stand is the "Advance"—considerable numbers of which are being installed in L.C.C. estates.

The subsidiary firm of Kula Refrigerators, Ltd., are also exhibiting on this stand; and in addition to the 3 cu.ft. gas-operated refrigerator, an entirely new departure by this Company takes the form of a café set—the "Aquafont"—complete with coffee and milk urns of 1 gallon capacity, with earthenware linings. The set is constructed of heavy sheet copper with 18 gauge brazed interior waterways tinned and detachable for cleaning. After the boiler has been prepared for service (within five minutes of lighting the gas, starting from cold), a continuous flow of boiling water is available. The set is made in three sizes varying in capacity from 240 to 480 pints of boiling water per hour—full gas rate only being employed while boiling water is actually being drawn off. The boiler is self-feeding from a small tank attached to the set, and is attractively finished in chromium plate or polished copper as desired.

Gas Light and Coke Company.

An extraordinarily fine stand is that of the Gas Light and Coke Company, who present the story of water heating, cooking, laundry, and space heating in a novel and interesting way. It is difficult to do justice in mere words to the many ingenious and striking devices whereby gas service is portrayed; but movement may be said to be a feature of the display. Cascades of steaming hot water flow down between glass panels; the turning of the thermostat on a dummy cooker ("Tune in to Mr. Therm") lights up different coloured pictorial panels to show the advantages of oven heat control. "Let me make London clean," says a model of Mr. Therm as he busily sweeps back and forth across a London "landscape" with a large broom. Sectional models of a cooker and water heater show the construction and operation of these appliances. And a wide range of all the latest gas appliances in pleasing coloured finishes indicates how modern labour-saving gas service can be obtained at a minimum cost—the whole enhanced by good lighting, compelling slogans, photographic representations in colour, and effective bas-relief work. This is a stand the design of which has to be seen to be fully appreciated.

Ideal Boilers & Radiators, Ltd.

Here is a comprehensive exhibit of boilers and radiators for central heating and hot water supply. Gas boilers take a prominent place, in attractive enamel finishes, while other appliances include the Ideal "Cookanheat," embodying coke boiler and gas cooker in one apparatus, towel rails, and other heating accessories.

R. & A. Main, Ltd.

An all-gas service stand is that of Messrs. R. & A. Main, Ltd., and the delightful design and arrangement of this exhibit is especially noteworthy, with its pleasing settings, polished wood panelling, and effective use of photographic reproductions of gas installations. As a centrepiece is a magnificent fireplace embodying the well-known "Gloria" fire in marble surround, with other of the firm's gas fires grouped on either side. Portable fires are also shown in conjunction with the "Gasclock" prepayment mechanism which can be attached to the fire and easily moved about from room to room. On the cooking side there is a wide range of up-to-date appliances, particular prominence being given to the firm's new streamlined "Cabinet" models with a one-finger-movement folding plate-rack, flash ignition, and griller pan adjustable for height by means of a screw in the handle. Smaller models have other interesting features, including enamelled griller pan to match the cooker, dull chromium oven grids, and hot closet which may be fitted in place of the plate-rack or independently on the wall alongside. A large gas-heated drying cabinet is another exhibit, while there is a comprehensive display of water heaters, in green finish strikingly arranged in a red alcove, setting off the appliances to excellent effect. An entirely new water heater is the dual-point and multi-point—No. D. 1 and M. 1 respectively. In general design this presents somewhat of a breakaway from traditional practice, having the following overall dimensions with a pleasing "panelled" effect on the front: Width, 16½ in.; depth, 9 in.; height, with baffler, 40½ in.; all the parts are readily accessible and can be dismantled without disturbing the flue equipment. Other features of these heaters include integral anti-downdraught baffler, pilot safety and slow ignition devices, volumetric gas governor, differential pressure type of automatic gas and water valve, patented pilot cock device, water throttle, accessible filters on gas and water supplies, and union joint on hot water delivery pipe. The finish is in white vitreous enamel with a minimum of chromium plate.

Parkinson Stove Company, Ltd.

This is another stand which represents gas as providing all the essential household services. Particular attention is devoted to

the "Renown" cooker—an example of which is displayed on a revolving base in conjunction with an automatic device which continually opens and closes the oven door and table-top. The new "Crown" cooker, built on similar lines, is also shown. Other Parkinson appliances are so well-known in the Industry that it is only necessary to say that on this stand may be found apparatus to cope with all household heating problems. A section is devoted to water heaters, of which a wide range of attractively finished appliances is on view, including their neat little circulator, which may be used as an auxiliary to or instead of the ordinary boiler system. Altogether a very comprehensive and well-arranged display.

Thomas Potterton (Heating Engineers), Ltd.

The two stands of Thomas Potterton (Heating Engineers), Ltd., once again represent complete automatically-controlled gas water heating service and central heating for residential, trade, and in-industrial purposes. The apparatus shown include the firm's well-known boilers and storage cylinders with thermostatic and remote control equipment, also clock control entirely without the aid of electrical mechanisms, and automatic cut-offs. Further exhibits include a sectional model of one of their larger boilers, greenhouse heaters, sports pavilion outfits, radiators, towel dryers, coke

boiler systems, &c. The firm are also demonstrating hot water equipment specially suitable for A.R.P. requirements. A new boiler in the "Empire" series—No. 3—is finished in aluminium paint with brass fittings. This boiler, which has a rated gas consumption of 120 cu.ft. per hour, includes an immersion thermostat operating through a relay valve to the boiler, complete with weep pipe with tap control. The burners are of the luminous type, with a special form of air direction plate to maintain correct combustion. The boiler is fitted with detachable feet which can be omitted when supported on stand or cantilever brackets.

Radiation Ltd.

Radiation show a wealth of appliances—gas cookers, fires, radiators, instantaneous and storage water heaters, and large-scale appliances. The *pièce de résistance* is the new "New World" cooker No. 345/348, whose streamline construction in porcelain enamel gives a finish as smooth as glass. They are obtainable in three colours—white and black, white and blue, and white and green. The other cookers on the stand, also in these attractive colourings and streamline design, are of the smaller

type which cater for flatlets and small kitchens. The display of large-scale apparatus comprises the "Embassy" boiler, "Savoy" griller, single-oven "Grosvenor" range, and "Belgravia" hot closet. There is a working exhibit in the water heating section, including instantaneous water heaters, and storage heaters. These are set against an attractive background of Adam green. The interior of the stand is finished in mahogany and the High "Beam" fires fitted into each section give visitors a true impression of how these attractive fires will look in their own rooms.

Gas in the Model Houses.

Gas is extremely well represented in all the ten model houses. This should be a source of considerable gratification inasmuch as in most instances the builders required no persuasion to include up-to-date gas services in their houses, but rather made initial application for the appliances to be installed as an integral and essential part of the finished buildings.

The All-Europe House combines ideas for easy, pleasant, economical living from many different countries, though only those have been chosen which are suitable for English needs, habits, and material resources. The equipment includes a gas-ignited coke grate in the living-room, and in the kitchen a gas refrigerator, wash-boiler, drying cabinet, Parkinson Mark II. "Renown" cooker, and "Ascot" multi-point water heater. The cooker, refrigerator, and wash boiler make a neat ensemble built into one unit—the refrigerator on the right of the cooker and the wash-boiler on the left, access to the burner of the latter being by means of a door which is an exact replica of that of the refrigerator on the other side.

In the Universal House are two Brooks Phillips coke grates, an "Ascot" multi-point, wash boiler, and Radiation "348" cooker, while the central heating and auxiliary hot water supply are provided by two Beeston coke boilers side by side in the kitchen.

The Leicester House, by Davis Estates, Ltd., shows an example of the gas refrigerator which is offered by the Gas Light and Coke Company at 1s. 3d. a week inclusive of gas. This is an L. 1 Electrolux model in a grey-blue finish, whose gas supply, of course, by-passes the meter. In the kitchen there is also a Main gas cooker and "Ascot" water heater.

The Tudor House shows another example of a gas refrigerator in coloured finish—this time in blue—built into a cupboard unit in the kitchen. Here, in addition, is a Radiation cooker, a wash-boiler, and an "Ideal" coke boiler for central heating.

In the Berghome there is also an "Ascot" multi-point, L. 22 refrigerator, Parkinson Mark I. cooker, wash-boiler, "Ideal" boiler, and a Radiation "Reverie" 9-radiant fire in the living room.

A larger house by Davis Estates, Ltd.—the Orpington—includes a number of gas points throughout the building, with "Ascot" water heater, coke boiler, Radiation cooker, L. 22 refrigerator, and wash-boiler in the kitchen.

In the Southwold House is a Bratt Colbran 4-unit gas fire in an attractive setting, while the kitchen equipment includes "Ascot" multi-point, L. 22 refrigerator, wash-boiler, Cannon cooker, and "Ideal" boiler for central heating.

The Drinkwater House is equipped with "Ascot" multi-point, L. 22 refrigerator, "Ideal" coke boiler, and Flavel "37" cooker.

In the Kingston House—by Hilbery Chaplin, Ltd.—is a Parkinson "Curvex" fire in the lounge, while in the kitchen are a wash-boiler, Parkinson Mark I. cooker, L. 22 refrigerator, and Ewart "Empire" multi-point water heater.

And lastly, in the Hurlingham Bungalow is a coke boiler, L. 1 refrigerator, sink water heater, and all-enamelled Vulcan cooker.

From the foregoing it will be appreciated that gas has a wonderful showing in all the model houses. In nine out of the ten gas provides the water heating either alone or in conjunction with coke. In all ten are up-to-date enamelled gas cookers of various makes. In the majority are gas wash-boilers, while in nine out of the ten are gas-operated refrigerators. What more need be said of the growing recognition by builders that gas service is regarded as a *sine qua non* by the discriminating house purchaser? And in every case no difficulty had been experienced in selecting gas appliances which not only fit neatly and conveniently into the kitchen plan—not easy in many of the smaller modern houses!—but also harmonize appropriately with the decoration scheme. The Gas Light and Coke Company were responsible for the bulk of the gas fitting work in the model houses, and full credit is due to them for the high quality of workmanship which is apparent.

Manchester and Yorkshire Junior Associations

Joint Visit to Corby

The Annual Joint Meeting of the Yorkshire and Manchester and District Junior Gas Associations took place at Corby on April 5. Approximately 80 members attended and inspected the Works of Messrs. Stewarts & Lloyds, Ltd.

The trains from Manchester and various parts of Yorkshire were met at the two main Stations at Leicester by motor 'buses and the visitors conveyed to the Corby Works. An hour was spent on the Works before lunch which was partaken of at the Corby Hotel. In the afternoon the blast furnaces, coke ovens, rolling mills, and tube works were inspected, and the visit concluded with tea. (Brief particulars of the Corby Works will be found in the "JOURNAL" for March 29, p. 899.)

Mr. A. WYLIE (Sheffield), President of the Yorkshire Juniors, proposed a hearty vote of thanks to Messrs. Stewarts & Lloyds, and said that it afforded him the greatest pleasure to voice the united thanks of the two Junior Associations. The visit had been looked forward to for some time, and the hospitality and kindness of the firm were much appreciated. Mr. G. Le Mare and his Staff, and Mr. E. A. Grace were particularly thanked for all they had done to make the meeting such a success. Mr. Wylie said that the quality of Messrs. Stewarts & Lloyds' products, and their many services rendered to the Gas Industry were realized and appreciated, and with the excellent relation which existed between the management and the workpeople, coupled with the magnificent and up-to-date plant, the prosperity of the firm was in his opinion assured in the future.

Mr. H. PLATT (Bolton), President of the Manchester Juniors, seconding the vote of thanks, said it was a revelation to him to find that Messrs. Stewarts & Lloyds, Ltd., worked 24 hours a day, the same as was done in a gas-works. He heartily endorsed Mr. Wylie's remarks and sincerely thanked Messrs. Stewarts & Lloyds for a very interesting meeting and for their generous hospitality.

Mr. LE MARE (Office Manager at Corby), replying, thanked Mr. Wylie and Mr. Platt for their kind remarks, and said that they had been looking forward to showing the members round the Corby Works, of which everyone connected with Messrs. Stewarts & Lloyds was justly proud. He explained that the firm was divided into two sections—first the Works Departments and then the Sales Department; the members of the Gas Industry already knew the sales side, but to-day, at least, some of them were seeing where the work was done. The Manchester and Yorkshire Juniors' visit was the second biggest to the Works, and Mr. Le Mare concluded by saying that Gas Engineers were particularly welcome, and it had been a pleasure to organize this visit.

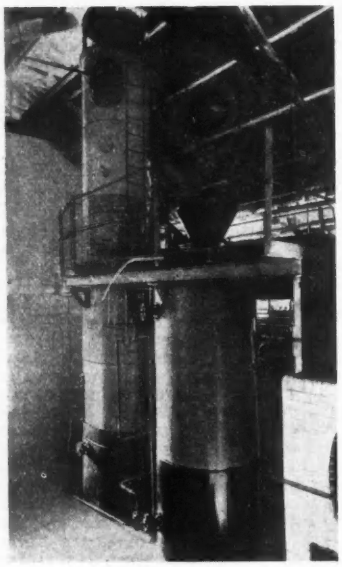
Mr. E. A. GRACE, of Messrs. Stewarts & Lloyds, Ltd., Birmingham, said on behalf of the sales side that they were also proud of Corby Works, which had been conceived during the darkest days of the depression.

Mr. ATKIN and Mr. MCQUAKER, of Messrs. Stewarts & Lloyds at Sheffield and Manchester respectively, also said a few words.

New Automatically Controlled C.W.G. Plant at Freshwater, I.O.W.

The new unit of automatically-operated carburetted water gas plant recently erected and put into commission at the Yarmouth Works of the Freshwater Gas Company, Ltd., I.o.W., has a guaranteed capacity of 150,000 cu.ft. of 500 B.Th.U. gas daily. The plant was installed by Davison & Partner, Ltd., of Stockton-on-Tees, in collaboration with their Associated Companies, the Power-Gas Corporation, Ltd., and Messrs. Ashmore, Benson, Pease, & Co., Ltd., of the same address.

The plant consists of a water gas generator with standard attachments, a combined carburetter and fixing chamber for the production of the enriching oil gas, suitable valves and connexions between the generator and carburetter for operating both up and down runs, a combined washer-scrubber for cooling the gas and affording a seal between the plant and relief holder, a tar separator and settling tank, and an oil storage tank. The combined carburetter and fixing chamber is Davison & Partner's standard type, where the enriching oil is sprayed into the carburetting chamber contra-flow to the incoming water gas stream, and, in conjunction with an oil injector of improved pattern, ensures sufficient atomization of the oil. This particular type of combined carburetting and fixing chamber in one vessel lends itself very well to the restricted site conditions owing to the saving of ground space effected in comparison with double vessels. Also included in the carburetting equipment is a thermo-electric pyrometer indicating the temperatures in the carburetter and fixing chamber, and a meter recording the amount of oil injected, together with an automatic steam purge apparatus.



Automatic Mechanically-Operated Plant at Freshwater.

The plant auxiliary equipment is housed in a separate machinery room with the object of ensuring the best running conditions, and comprises a blowing fan, oil supply and effluent water recirculating pumps, and the automatic mechanical operator. These units are arranged for a common drive by means of a high-speed vertical steam engine, the whole making a compact assembly, together with the pressure gauges and instrument panel conveniently grouped and mounted in an adjacent position.

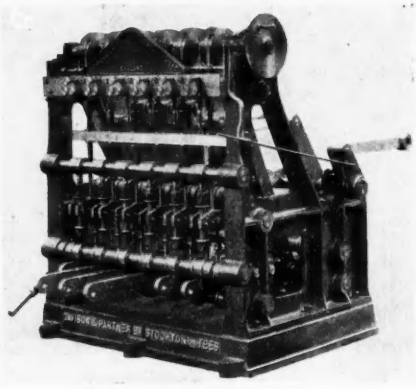
The item of outstanding interest on the plant is the automatic mechanical operator. It entirely dispenses with the need for the constant attendance of a manual operator, and left to itself it controls the cycle of operations, each succeeding cycle being a repetition of the previous one in point of duration of blow, up run, down run, purge, &c., and there can be no change in the sequence of operations for which the controller is set.

Not only does the apparatus control the operation of the plant, but it also provides the motive power for moving the valves. The machine will continue operating indefinitely unless stopped voluntarily. It is provided with the necessary fittings so that if for any reason the operating valves on the plant fail to respond to the requirements of the operator, gas making operations are at once stopped by the action of the controller. At the same time an alarm is set in operation and continues to sound until stopped by hand signifying, of course, that the warning is having attention.

A feature of the operator is that the attendant can, if he wishes, cut out the control portion of the apparatus while still leaving the machine capable of moving the plant valves. The attendant can then manipulate the plant valves in any way he wishes (within the limits of safety referred to later) by simply pulling control knobs (a pair of knobs being provided for each valve "open" and "shut"). The machine itself will then move the main valves by the same power means as in automatic operation. There is, therefore, a flexibility of operation made possible which should commend such a plant to those who appreciate the complete working of a water gas plant. Simple interlocking gear is incorporated in the machine, so that when the plant is being operated by means of the knobs the attendant cannot move the valves in an order to bring about unsafe conditions.

If the motive power is entirely shut off, the operator can still operate the plant valves. The valve to be moved would first be selected by pulling the proper knob and then manual power applied to the machine by means of a lever, the same lever moving whichever valve was selected.

Although it is not essential to the working of the control machine as such, the means of driving the operator in common with the air blower and the oil and water pumps is worth noting.



Automatic Mechanical Operator.

In this case the source of power is a high-speed steam engine direct coupled to a countershaft or rather an extension of the crank shaft. From this shaft separate texrope drives lead to the air blower, the oil pump and the water circulating pump and to a reduction gear set for driving the operator. Incorporated in the reduction gear set is a centrifugal clutch adjusted to slip when the load on the output shaft exceeds a certain predetermined torque. The reduced speed causes a catch to slip closing an emergency steam valve to the engine and plant thus shutting down the plant by stopping the auxiliaries and cutting steam off the generator.

Institution of Gas Engineers

Conference on Chemical Works Safety.

On Thursday and Friday a conference on safety in chemical works will be held by the Chemical Engineering Group of the Society of Chemical Industry in the Metallurgical Department of the Royal School of Mines, Prince Consort Road, South Kensington, S.W. 7. The conference will be held in conjunction with the National "Safety First" Association. The Papers to be presented were published in *Chemistry and Industry* for April 15.

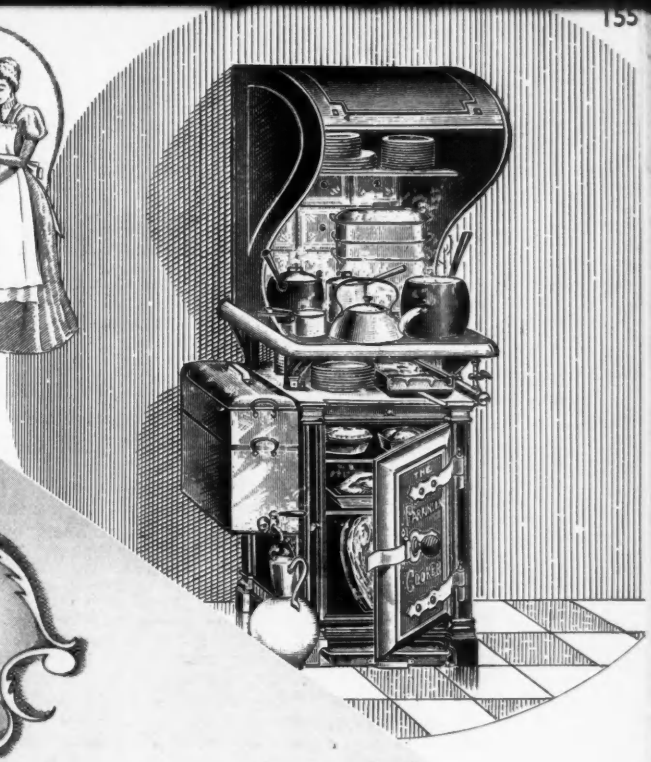
Members of The Institution of Gas Engineers will be welcome at a Meeting of the Institute of Fuel to be held in the Lecture Theatre of the Geological Society of London, Burlington House, Piccadilly, W. 1, on Thursday, April 27, 1939, at 6 p.m. A Paper will be given by Alan S. Bean, M.A., and Joseph Brown, M.Sc., indicating the value of coal analysis to the producer, distributor, and user, and will be followed by a discussion.

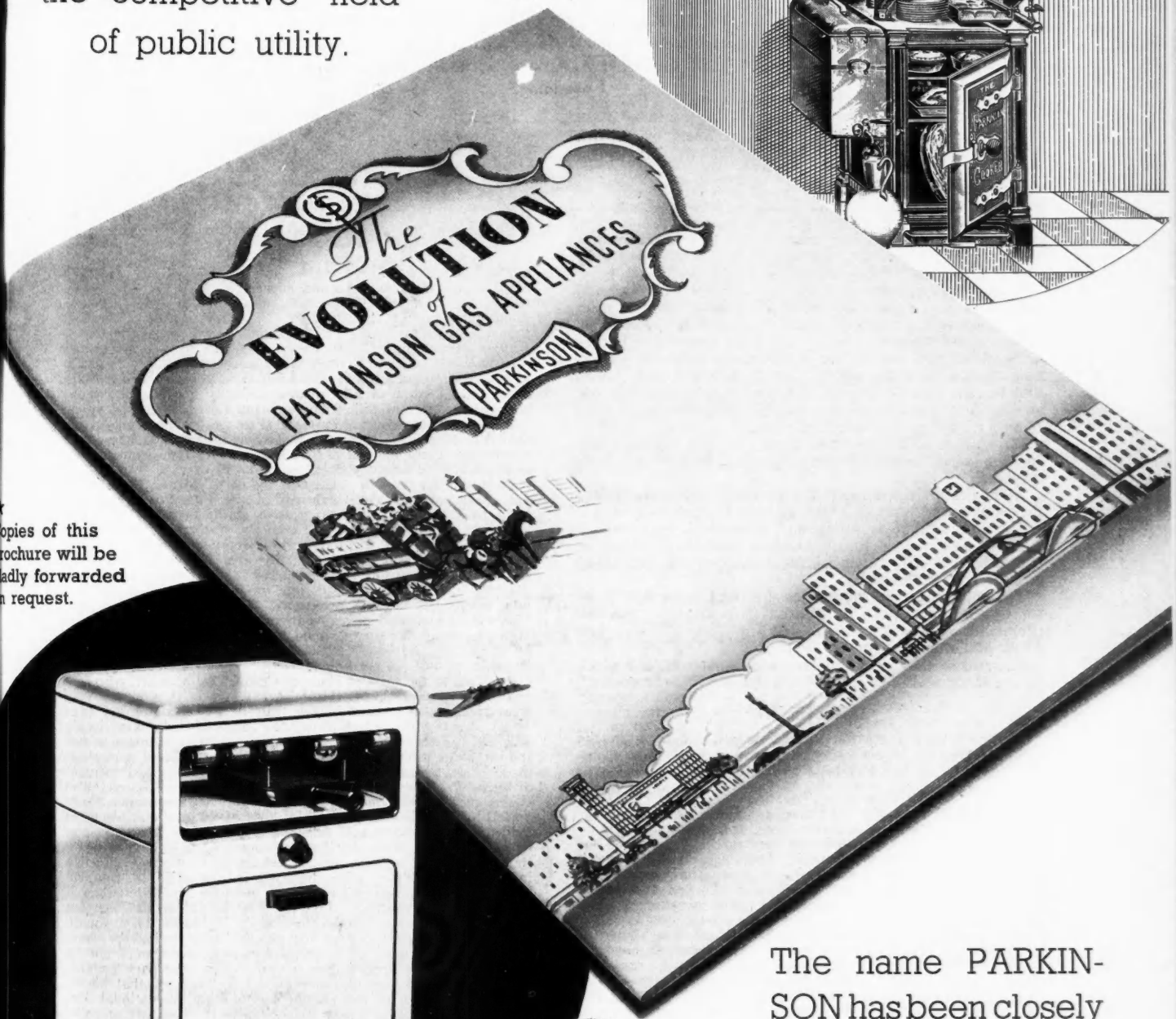
The following recently issued British Standard Specifications can be obtained, price 2s. each, from the Secretary, The Institution of Gas Engineers, 1, Grosvenor Place, S.W. 1:

No. 834-1939.—Precast concrete blocks for walls.

No. 835-1939.—Asbestos cement flue pipes and fittings (heavy quality) for domestic heating stoves.

The GAS INDUSTRY may well be justified in reviewing with pride its amazing progress in the competitive field of public utility.





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North British Association of Gas Managers

Spring Meeting

The Spring Meeting of the North British Association of Gas Managers was held in the Carlow Hall, Leven, on April 14—the PRESIDENT, Mr. H. A. Aitken (Buckhaven and Leven) presiding.

A civic welcome was extended to members by Provost W. H. Nairn (Leven) and Provost W. Smart, J.P. (Buckhaven).

Provost NAIRN congratulated Mr. Aitken on his election as President of the Association. From his own experience he could testify that Mr. Aitken was a most efficient and competent Gas Manager. He trusted that their deliberations would bear fruit and that the visitors would so enjoy their stay in Leven that they would return in the summer.

Provost SMART, associating himself with the welcome, said they could have chosen no better place than Leven to meet in. Leven was a town of which Provost Nairn was justly proud. Buckhaven was one of the most progressive burghs in Scotland and one of the finest things they did was to municipalize their gas supply. In conjunction with Leven they had set up a Board of Gas Commissioners and they did an excellent thing when they engaged Mr. Aitken as their Manager. He paid tribute to his ability.

Mr. Aitken briefly returned thanks for the welcome and for the kind remarks made regarding himself by both speakers.

Apologies were intimated from various members of the Association and representatives of kindred societies.

The President made fitting and sympathetic reference to the loss sustained by the Association through the death of two members—Mr. Edwin Linsley (London) and Mr. James A. McKelvie (Edinburgh).

The following were nominated for the September ballot for Council vacancies: D. Morton (Arbroath), R. Waddell (Polmont), A. C. Rea (Perth), A. Cuthbert (Stirling), and R. A. McLaren (Newton-on-Ayr).

Mr. Aitken then delivered his Presidential Address, which will be found elsewhere in this week's issue of the "JOURNAL."

LUNCHEON.

Members were thereafter entertained at luncheon in the Scoonie Hall by the Buckhaven and Leven Gas Commissioners—Councillor George J. Fairweather (Chairman of the Board) presiding.

Proposing the toast of "The Provosts, Magistrates, and Councils of Buckhaven, Methil, and Leven," Mr. JAMES JAMIESON (Edinburgh) said: The toast which I have been asked to propose is one which we are all pleased to honour. Although divided in text it loses none of its charm, its dignity, or significance on that account. The inclusion of the Burgh of Buckhaven and Methil and of the Burgh of Leven in one toast is not exceptional. Both burghs have played a prominent part in the provision of increased housing accommodation. Indeed, in this connexion the Burgh of Buckhaven has attained more than a local reputation not only because of the number of houses provided, but also by reason of the beauty of design and excellence of layout of the various housing estates provided. Besides supplying raw materials for the production of gas your district has many important and historic links with the Gas Industry. The North British Association of Gas Managers, your guests to-day, had its origin in Fife and the distinction of providing our first President—Mr. Lowden—goes to Leven. That was 76 years ago, but to-day is the first time we have met in the town of our founder. It is fitting, therefore, that I should pay tribute to the courage and foresight of your distinguished townsman. He sensed the value of co-operation on matters which have a common interest. He gave a lead and your Burghs have continued to pursue that policy. Your Gas Undertaking was purchased by arbitration and the decision of Lord Ashmore will remain for all time a standard work of reference for the Gas Industry on that subject.

In amalgamating your interests in a common cause and with the centralization of gas production an organization has been established which is not only a credit to the burghs but is an outstanding example of foresight and enterprise. To all those responsible for the administration a full measure of credit is due. To-day I will be excused if I name one in particular, your Engineer and Manager, on whom the responsibility of Management rests. As an Engineer, Mr. Aitken's views and opinions are much respected and as an administrator his reputation is of a high order. His work in the national interests of the Gas Industry is well known and much appreciated. We wish him well and your Undertaking prosperity.

I feel compelled to make one further reference and that briefly to the firm of Messrs. Henry Balfour & Co., the one remaining gas engineering firm in Scotland. In these days when we hear so much of the drift of Industry South it is encouraging to know that here is one firm which has not only resisted the call but has actually gone south and also abroad and brought industry back to Scotland. That is characteristic of the enterprise which established the Kingdom of Fife, made Buckhaven and Methil famous and prosperous, and will, I dare say, put Leven on the map.

Provost SMART (Buckhaven) and Provost NAIRN replied, and the latter urged Gas Managers to give as much work as possible to Messrs. Henry Balfour & Co., Ltd., as thus they would create employment for Leven people.

Proposing the toast of "The Gas Industry," Mr. C. A. CARLOW, J.P. (Manager and Vice-Chairman of the Fife Coal Company, Ltd.) paid tribute to the progressive spirit, farsightedness, and ability of Gas Managers. In Leven the history of the Gas Industry was associated with the firm of Henry Balfour & Co., Ltd., which had been making gas plant for over 100 years. Referring to complaints regarding higher charges for coal, Mr. Carlow said the coal trade had had a bad time for ten years and should not now be grudged a little prosperity. They must remember that 85% of the increased prices went into the pockets of the miners. What he would like to see would be uniform prices paid for coal by all gas undertakings. It was unfair that one undertaking had to pay more than its neighbour.

Replying to the toast in place of Colonel W. M. Carr, who was unable to be present, Mr. H. A. AITKEN said: It gives me very great pleasure to respond to the toast of the Gas Industry proposed so ably by Mr. Carlow, to whom also we are deeply indebted for his many kind and complimentary references to our Industry. In referring to the Gas Industry, frequent remark is made of its amazing development with the advent and increase in intensity of the competition with which it is confronted. The claims of the Gas Industry do not, however, form that ready appeal to the politician such as do those of the coal and electrical industries. Beset on either side, the Gas Industry is called upon to pay increased prices for its coal supplies and submit to arbitrary conditions of sale against which it is without effective redress, while on the other hand, it is compelled to compete under restrictions against an industry unfettered in the manner it may carry on its business. Like the Railway Companies, the Gas Industry has considerable justification in its claim for a square deal. The important rôle of the Gas Industry during the years 1914-18 in the supply of materials for munitions should not be overlooked at the present time, nor the prominent part the Gas Industry can play towards an economic solution of that highly important problem of the present day of how the national fuel resources of the country may be utilized to the best advantage.

The Gas Industry never was in more healthy state than at the present time, nor those engaged in the Industry more enthusiastic, virile, and progressive. It is not, I think, mere optimism to state that the Industry has before it a future yet greater than the great past of which it can feel justly proud.

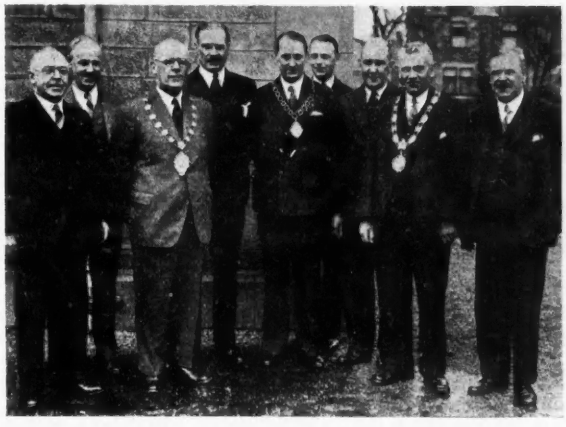
Mr. R. D. KEILLOR (Greenock) proposed the health of the Chairman, and Councillor FAIRWEATHER acknowledged the toast.

Visit to Henry Balfour & Co., Ltd.

Thereafter members of the Association visited the works of Henry Balfour & Co., Ltd., where they were received by Mr. W. Lindsay Burns (Managing Director). The various pro-

cesses of preparing, marking, shearing, rolling, welding, and assembling steel were seen, and purifier covers, with tanks for use in the chemical, distilling, dairying, and other trades, were also inspected in various stages of manufacture. Special interest was shown in the X-ray equipment and in a gas-fired furnace.

Members were subsequently entertained at tea by the firm, when Mr. Aitken proposed a vote of thanks to Messrs. Henry



The group includes Mr. H. A. Aitken (President), Mr. A. Kellock (Senior Vice-President), Mr. R. D. Keillor (Junior Vice-President), Mr. J. Jamieson (Edinburgh), Mr. R. Fife (Kilmarnock), Mr. C. A. Carlow (Fife Coal Company), Mr. J. M. Ireland (Carnoustie), Provost W. H. Nairn (Leven), and Provost W. Smart (Buckhaven and Methil).

Balfour & Co., Ltd., and their Managing Director, Mr. Lindsay Burns, for extending to the Association an invitation to inspect their works and plant and for all they had done to make the visit interesting and enjoyable, and for the hospitality they had extended to the Association that afternoon. They all had rather a soft side towards this old-established Scottish firm of gas engineers in whose service so many gas managers and leading technical officers of gas undertakings had received their early training. Within quite recent years Messrs. Balfour had extended their operations very considerably to cover other industries as well as the Gas Industry and were about to embark upon a yet more ambitious scheme of extension. The firm was never more progressive than at the present time under the management of the Managing Director, Mr. W. Lindsay Burns. They had all been very much impressed by the extensive layout and completeness of the equipment of the works for production of the plant and carrying on of the work for which the firm was so well noted.

Mr. W. LINDSAY BURNS said it had given his co-Directors and himself great pleasure to have the members of the Association there that day. They felt always that in Scotland they had a rough row to hoe but they had done their best to build up and extend their business. His view was that industrialists ought to provide work in Scotland for men born and bred there. They had 600 employees and the new development in aeroplane work made them hope that soon they would employ another thousand persons. They had looked to Scottish Gas Managers for support and had not looked in vain. He thanked them for their help and promised to convey to his co-Directors the kind remarks of Mr. Aitken, which he hoped they would continue to justify.

Spring Golf Competition.

WINSON SCOTT CUP.

	Gross.	Handicap.	Nett.
R. Stewart, Auchterarder ..	74	2	72

HANDICAP PRIZES.

Section I. (Handicaps up to and including 9)—

	1st	R. Stewart, Auchterarder
	2nd	J. R. Stevens, Elie
Tie	3rd	A. Cuthbert, Stirling
Tie	4th	S. Hall, Edinburgh
	5th	D. H. Munro, Glasgow

Section II. (Handicaps over 9)—

	1st	H. G. Keillor, Buckie
	2nd	A. W. Farquhar, Fraserburgh
	3rd	J. M. Dow, Kirkcaldy
Tie	4th	C. Hamilton, Loanhead
Tie	5th	R. A. MacLaren, Newton-on-Ayr

Gas Undertakings' Results

Colombo.

In their report for the twelve months ended December last, the Directors of the Colombo Gas and Water Company, Ltd., state that the general trade of the Colony during the year continued to show improvement. The quantity of gas sold was 240¼ million cu.ft., and the working results were again satisfactory. There is a balance of net revenue amounting to £21,582, and from this the Directors recommend the payment of a dividend at the rate of 10% per annum on the ordinary shares, which will leave the sum of £15,778 to be carried forward to next account. The annual meeting took place in London on April 17.

Leamington.

The quantity of gas sold by the Leamington Priors Gas Company in the six months ended Dec. 31 last shows an increase of 5% when compared with the corresponding half-year of 1937—equivalent to nearly 10½ million cu.ft., or 50,000 therms. While income and expenditure both show an increase, the rise in expenditure exceeds the rise in income, the result being a reduction in the balance of Profit and Loss Account from £11,278 to £9,956. During 1939 coal costs will be even heavier than previously, because of the expiry of favourable contracts made in 1935 and 1936. As the result of an offer made to shareholders, 752 new "C" ordinary shares of £20 each were issued at a premium of £10 per share. The dividends are at the statutory maximum rates of 10% per annum on the "A" ordinary shares and 7% per annum on the "B" and "C" ordinary shares. Improved results have been brought about by the working of the new plant in the retort house extension.

Luton.

The large number of unoccupied houses within the Borough was put forward at the Annual Meeting of the Luton Gas Company as one of the reasons for a decrease in sales for the year ended Dec. 31, 1938. Largely owing to a further substantial rise in the cost of coal, the meeting approved a rise in the price of gas from 8⅛d. per therm to 9d. per therm. The Directors' report, which was for the year ended Dec. 31, 1938, showed an increase of 789 in the number of consumers, but there was a decrease in the sales of gas over the year 1937 of 278,884 therms, or 5·27%. After providing for the debenture interest and other charges, transferring £185 to Reserve Fund, and the payment of the dividend for the half-year ended June 30, 1938, there remained a balance on the net revenue account of £19,033. The Directors recommended the payment of dividends, less tax, in respect of the half-year ended Dec. 31, 1938, as follows: £2% on class "B" preference shares, making £4% for the year; £2 10s.% on class "C" preference shares, making £5% for the year; £4 7s. 6d.% on the consolidated ordinary stock "A," making £8 15s.% for the year; and £3 12s. 6d.% on the consolidated ordinary stock "B," making £7 5s.% for the year. The Chairman (Mr. R. E. Tomson) prefaced his report by reference to the jubilee of Mr. W. Phillips' connexion with the Company. Later in the proceedings, Mr. Phillips, who is, of course, General Manager, Engineer, and Secretary of the Company, said: "In regard to what the Chairman has said as to my jubilee in the Luton Gas Undertaking, it may be also of interest to you to know that my son, who took his Engineering Degree at Cambridge University and has for the last three or four years been training as a Civil and Gas Engineer, has been appointed by the Directors to be my Personal Assistant in the very near future. As you know he will be the fourth generation of the Phillips family to enter the service of the Luton Gas Company, which service—if I or my son live to 1944—will have extended to a period of 100 years."

Wells.

The Directors of the Wells Gas Light Company are able to report an increase in gas consumption during the past year. They state that the quantity of gas sold over the twelve months was 44,874,200 cu.ft., or 220,781 therms, an increase of 1·59% on the sales during the preceding year. The dividend for the year on the ordinary stock is 5%, and after transferring the sum of £350 to the Renewal Fund, there will remain a balance of £1,532 to be carried to the next account. In October, 1937, the Company was merged with the South-Western Gas and Water Corporation, Ltd.

North British Association of Gas Managers

Presidential Address

OF

H. A. AITKEN, M.Inst.Gas E.

Presented at the Spring Meeting of the Association held in Leven on April 14.

THE PRESIDENT.

Mr. H. A. Aitken was educated at Montrose Academy and received his early training with the Montrose Gas Company, Ltd. Appointed Technical Assistant to the Kirkcaldy Corporation Gas Department in 1911, he later held a similar appointment at the Motherwell Gas-Works. During the war, after service with the 7th Cameron Highlanders, he returned to France with a commission in the 8/10th Gordons, 15th (Scottish) Division. In 1919 he was given an appointment with the City of Stoke-on-Trent Gas Undertaking, and afterwards was Works Manager of the Longton Works of that Undertaking. In November, 1922, he obtained his present position as General Manager to the Buckhaven and Leven Gas Commission.

The districts of Buckhaven and Leven have been long and intimately associated with the Gas Industry. It is recorded that one of the earliest factories in Scotland to be lit by gas was the linen factory at Kirkland, now within the Burgh boundaries, in the year 1810. As early also as 1810, gas plant was being manufactured and erected by a local firm which, through the years between, has continued to manufacture and erect gas plant extensively both at home and abroad, and whose name to-day is familiar in every gas-works throughout the country.

As a nursery and training ground of Gas Managers and gas-works technical supervisors, the district can have had few equals, as the records of gas undertakings over a century throughout not only Scotland, England, Ireland, and Wales, but also abroad and in the colonies, will fully bear out. Names familiar in the district are to be found connected with gas undertakings in all parts of the Empire.

I would also remind you of the prominent part taken in the formation of this Association in the early days of 1862 by Mr. John Lowden, the then Manager of Leven Gas Works. Mr. Lowden was one of the four originators of our Association, and was the first President. Following the first Annual Meeting of the Association held in Cupar, Fife, he continued in office during the second year of the existence of the Association.

Thus early there was appreciation of the advantages of co-operation between gas undertakings and of the benefits which would result from organization, inter-communication, and discussion of the numerous problems with which the Gas Manager was, and is, confronted.

Subsequent to the formation of the Association of Gas Managers in Scotland, the foundations of the present Institution of Gas Engineers were laid, and, in addition to the Chartered Institution, those of a series of district Gas Associations covering the whole of England, Wales, and Ireland. The number and strength of the Gas Industry organizations now in existence throughout the world are a monument to the pioneer efforts of those originators of the North British Association of Gas Managers. Passing years have but emphasized the necessity and the usefulness of these organizations, and it is fitting that to-day our thoughts should go back to those who laid the foundations of our own Association, and that we should make acknowledgment of our indebtedness—indeed the indebtedness of the whole of the Gas Industry—to those Scottish Gas Managers of former years.

Doubtless it is true to say of them "They builded better than they knew."

BUCKHAVEN AND LEVEN GAS UNDERTAKING.

General.

The acquisition of the Gas Undertakings at Leven and Buckhaven in post-war years by the Burgh of Buckhaven and Methil and the Burgh of Leven, and the formation of the Buckhaven and Leven Gas Commissioners to control the Undertaking, constitutes a notable example of Joint Burghal enterprise under the Burgh Gas Supply Acts (Scotland). In 1931, I had the privilege of submitting to you at the September Meeting held at Rothesay, a Paper dealing with the development of this Undertaking following the acquisition by the Joint Burghs, and it is, therefore, unnecessary to review its progress prior to that date.

Vertical Retort Plant Extension.

Increasing consumption of gas rendered necessary in 1935 an extension of the vertical retort plant, not so much from the point of view of the capacity of the plant to meet the maximum daily output, but rather because of the increasing number of retorts required to meet the summer load, and the necessity of having a sufficient reserve of retorts to permit of resetting each of the ovens of four retorts as and when necessary. The output of the summer period has increased proportionately to a greater extent than the peak winter demand.

Accordingly, an extension of four retorts, 33 in. × 10 in. × 25 ft. was carried out by Messrs. West's Gas Improvement Company, the retort house being extended together with the coal and coke-handling plant, bunkers, &c., in the form of an additional setting with producer of adequate capacity. The producer was inter-connected with the existing main producer flue from the other producers, and the waste-gas flues were similarly inter-connected and led into the existing chimney, which was extended about 14 ft. in height.

Advantage was taken of the necessity for thorough overhaul of one of the duplicate exhausters to replace it by another of increased capacity. With minor adjustments, the new exhauster was readily installed upon the same bed utilizing the same engine, and it has been possible thereby to cope with a moderate increase in the peak load.

In 1936, an opportunity was presented to acquire an extensive range of small house property adjacent to the works and occupying an area of some 1½ acres. This was ulti-

mately purchased for the sum of £7,000. The properties are, for the greater part, occupied, but it is hoped in due course, to demolish them and add the ground to the works area. Some of the houses already vacated have been demolished, and the sites thus cleared with the ground attached incorporated into the works.

In 1937, an installation of new purifiers was substituted for the existing purifiers which had become too small for requirements during the period of heavy output, while in place of the existing drum meter which was defective and also too small, a Connersville station meter was installed.

The combined installation rendered possible a re-arrangement of a section of the Works' mains inconveniently situated and of inadequate diameter.

The new purifiers were installed by the local firm of Messrs. H. Balfour & Co., Ltd., and comprise four boxes built in line, each box measuring 30 ft. wide × 25 ft. long × 6 ft. deep inside. The valves and connexions are 15 in. diameter. The purifiers are built on a reinforced concrete raft, 4 ft. below surface level, the top of the boxes being 2 ft. above ground. They are housed in a steel-framed building, the roof of which is sheeted with asbestos sheets having continuous roof lights on either side, and a continuous ventilator formed with asbestos sheets and ridged, with louvre sides.

The Connersville station meter was supplied by Messrs. W. C. Holmes & Co., of Huddersfield. It has a normal rated capacity of 65,000 cu.ft. per hr., and is equipped with a counter giving readings direct in cubic feet, pressure gauge to show pressure loss across the meter, flushing device to keep the meter clean internally, and corrugated copper expansion joint fixed on the meter inlet.

Centralization Costs.

The following figures thus fall to be added to the detailed centralization costs given in my Paper of September, 1931:

		£	£
Total centralization costs prior to 1931 ..			36,638
Vertical retort plant extension	1935	5,981	
Properties	1936	7,969	
Purifiers	1937	7,675	
Station meter	1937	492	
			22,117
			£58,755

It may also be of interest to show comparative statistics of the Undertaking for the year ended May 15, 1938, along with those previously furnished of earlier years from which will be noted the advantages which have been derived from the developments carried out alike by the Undertaking and consumers of gas.

Comparative Statistics.

—	Year Ended May 15, 1922.*	Year Ended May 15, 1925.	Year Ended May 15, 1931.	Year Ended May 15, 1938.
Gas sold, cu.ft.	81,128,800	93,961,800	117,446,300	165,074,200
Maximum daily output, cu.ft.	375,000	470,000	539,000	684,000
Main mileage	26	27¾	36¼	42¼
Balance at revenue account	− £6,787	+ £3,018	+ £2,883	+ £10,657
Total outstanding debt ..	£95,161	£89,844	£99,507	£85,330
Outstanding debt per million cu.ft. gas sold ..	£1,173	£956	£847	£517
Interest and redemption charges per 1,000 cu.ft. sold, pence	24·61	21·22	23·36	13·54
Rates and taxes per 1,000 cu.ft. sold, pence ..	3·45	13·27	13·10	9·51
Price of gas per 1,000 cu.ft. to ordinary meter consumers	7s. 1d.	5s. 5d.	4s. 4d.	3s. 3d.
Price of gas per therm, pence	—	—	11·55	8·66

* Returns affected by coal stoppage.

It will be noted that since 1931, approximately six miles of mains have been added to the main mileage of the distribution system. This was necessary to provide a gas supply to the numerous housing schemes which have been embarked upon by the several local authorities within the supply area of the Gas Undertaking.

Gas Appliances.

The following table, showing the sale of appliances and installation work carried out, indicates the progressive development which has taken place in this connexion:

Gas Appliances and Installation Charges.

Year ended May 15,	£	Year ended May 15,	£
1924	294	1932	2,325
1925	598	1933	2,529
1926	806	1934	3,122
1927	714	1935	2,962
1928	841	1936	3,530
1929	1,322	1937	4,797
1930	1,936	1938	4,725
1931	2,291		

The policy adopted by this Undertaking in regard to the installation of gas appliances was governed in large measure by the necessity for the most stringent economy because of the exceptional financial straits of the Undertaking at the outset of its operation under municipal auspices.

Generally, the prices charged are such as meet the outlays involved in respect of appliances, material, and time, with a small margin of profit.

The selling prices of appliances are fixed at a minimum which, in itself, is a considerable incentive to increased sales. All piping for new appliances over a fixed length (10 ft.) is charged at a fixed rate per foot. A definite price for installation complete can thus be readily quoted. No objection is made by consumers to having a reasonable additional sum to pay in respect of necessary extra piping. High grade gas cookers and refrigerators are supplied on hire-purchase terms over a period of three years. Gas fires, water heaters, wash boilers, and other gas appliances exceeding £2 in value are supplied on two years hire-purchase terms. Gas cookers of specified types are also supplied on simple hire at rates which are just sufficient to cover renewal costs.

The continuous growth and development of the Undertaking have presented many serious problems. That the output would be doubled in course of the years which have elapsed since the combined Undertakings were acquired could scarcely have been foreseen, though it is now confidentially anticipated that considerable further development will continue to be made.

The difficult financial circumstances of the Undertaking in 1922 rendered necessary a policy of conservative capital expenditure and a scheme of gradual expansion, in preference to a large initial outlay.

The necessity of purchasing from time to time adjoining properties to make provision for expansion has been somewhat expensive, but in all the circumstances has proved an advantageous procedure. Ideal conditions and ideal layout have, however, not been possible since extensions of plant had to be effected to the best advantage upon the area at the time owned. Purchase of the several properties was effected as opportunity presented and ultimate possession of the whole of the properties which now belong to the Commissioners was not anticipated.

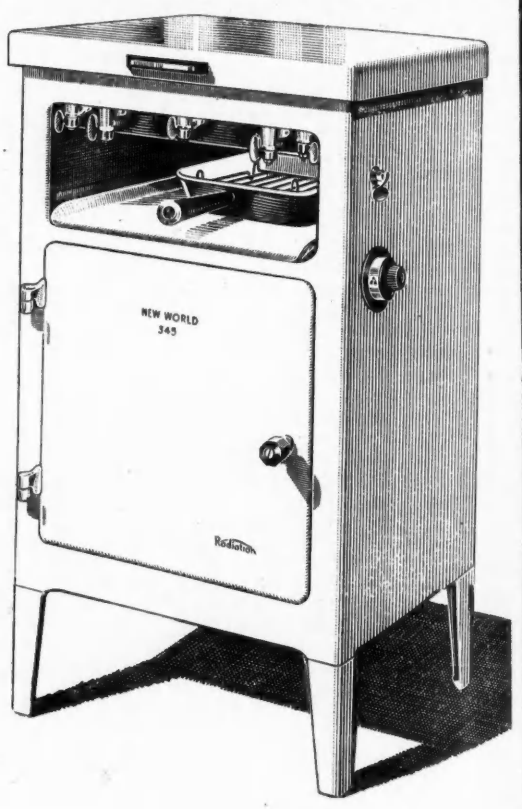
A similar problem has doubtless been experienced by many gas undertakings in course of development from the small beginnings of, in many instances, more than a century ago.

In recent years the rate of progress of gas undertakings has been accentuated by the extensive development of new outlets for the use of gas. More optimistic views of future requirements now prevail, and a greater regard is accordingly given to the advantages of providing an adequate area for works extension and development along pre-arranged lines to permit of efficient and economic operation.

In this connexion also, consideration is necessary of the tendency towards the grouping together of gas undertakings on a geographical or regional basis with consequent centralization of manufacturing operations and closing down of uneconomical units. Hitherto the Gas Industry has been regarded chiefly from a local aspect. Establishment upon a broader basis would appear meantime to be only deferred, and a more rapid development of the Industry thereafter is to be anticipated.

So far the subject matter of my Address has been confined in major part to the Undertaking in which I am personally interested and to events of the past. A study of the past has been stated to be useful only in so far as it serves as a guide for the present and the future. I propose, therefore, briefly to review some of the matters which are of interest

Above illustration shows the Radiation Stand at the Ideal Home Exhibition, Earls Court.



"DAILY MAIL" IDEAL HOME EXHIBITION . .

STAND 102

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The PUBLIC INTEREST *in* GAS....

again stimulated by

Radiation

A record number of visitors is already assured to this premier Exhibition for the Home lover. Again the opportunity is taken by Radiation Limited to show the progress made in Gas Cooking, Heating and Hot Water appliances, with a most impressive range of their manufactures.

"New World" Regulo-controlled cookers, in the latest colour combinations are attractively displayed on the stand and their advantages carefully explained by competent attendants.

NEW WORLD

REGULO-CONTROLLED

COOKERS AND RANGES

and engage the attention of members of our Industry at the present time.

Amalgamation and Co-ordination of Supply.

The subject of amalgamation is one which to most Gas Engineers is an ever-present matter for cogitation. Considerable progress has been made in the direction of amalgamation and co-ordination of gas supply since the subject was first given serious consideration.

That progress has not been made on what many may have considered the most satisfactory lines is probably true. That accomplishment falls far short of what is necessary, is also the opinion of many. It is, however, satisfactory to note that, in the grouping which have been effected, gas interests have in large measure been preferred to financial interests. This realization has resulted in consumers receiving benefit in nearly every instance, if not in price of gas, at least in better service.

Yet it is unfortunate that the development of what is undoubtedly a national service should have proceeded on haphazard lines. It is, too, rather surprising that municipalities which might be expected to have the greater regard for planned development should prove the chief obstacles to amalgamation or co-ordination along regional lines of undertakings conveniently situated geographically.

Lack of realization of the advantages to be gained is probably the reason. It may be, too, that the subject has not been sufficiently brought home to responsible public administrators to arouse interest. In this connexion it is primarily the duty of those engaged in the Gas Industry itself to take the initiative and guide public administrators so that gas supply may be made available under the most ideal and economic conditions.

Income-Tax.

Having regard to the very heavy rate of income-tax at the present time and in all probability for years to come, due attention should be given to the advantage of securing as a deduction from valuation for income-tax purposes, the value of plant which has become obsolete and has been replaced. Where plant of more adequate capacity has to be provided to cope with increasing requirements, this allowance for obsolescence constitutes a very considerable offset against the cost of new installations.

Assessable Valuation.

The valuation of gas undertakings for assessment is of very considerable importance to all. The subject is one which was very exhaustively studied by gas managers of a generation ago. Since then, interest has been spasmodically revived, but with very little apparent effective result.

Municipal gas undertakings predominate in Scotland, and it may be, many have so conducted their financial affairs that, at the present day, the preponderance of advantages of the present method of valuation for rating purposes operates in favour of their respective undertakings and, consequently, the subject has been but half-heartedly pursued.

In effect, the revenue system of valuation weighs most heavily upon an undertaking labouring under the burden of a heavy capital debt when relief from added burden is most needed, while an undertaking with a minimum of indebtedness to contend with is but lightly assessed.

The Undertaking of the Buckhaven and Leven Gas Commissioners was acquired in post-war years, and the method of valuation for assessment has proved a serious problem. In view of the present trend towards amalgamation, and the probability of increased capitalization in connexion therewith, this subject assumes an added importance. But it is chiefly the anomalies which exist under the present system to which I would refer—namely, the variations throughout the country in the allowances which are granted. This matter is one which calls for co-operative action rather than individual effort, since conceivably the latter might prejudicially affect the general interest.

Coal.

The Gas Industry has been much concerned of late with the effect of the various recent enactments of Parliament relating to coal. The subject is of special interest in an area largely devoted to coal mining where advantages can be weighed against disadvantages. The Gas Industry cannot lightly regard increase in the cost of its primary commodity which must necessarily have reaction in an increase in the price of gas. But the paramount importance of coal to this country demands that primary consideration be given to the interests of those engaged in the coal industry. The situation is one which demands the expression of views for and against in the endeavour to secure a solution which is in the best national interest.

That the methods pursued by the coal industry are inclined to be dictatorial in many respects would appear undoubted, and the campaign waged by the Gas Industry has not been without beneficial effects. The Gas Industry is quite prepared to pay a price for its coal supplies on the same basis as other users, but is unwilling to pay a price apparently designed to subsidize other users. The Gas Industry desires to purchase freely such coals as are best suited to its uses and, at the same time, to purchase its supplies on a guaranteed basis of quality. Such requests are not unreasonable.

This Undertaking, for instance, is called upon to pay approximately equal prices for coals of such dissimilar quality as the following analyses reveal:

——	A	B	C	D
Moisture, %	7·17	4·32	10·45	12·60
Ash, %	3·93	6·10	5·00	4·23
V.O.M., %	37·48	37·31	37·42	38·00
Fixed carbon, %	51·42	52·27	47·13	45·17
Calorific value, B.Th.U. ..	13,850	13,650	13,250	13,550

So much legislation, so many new schemes must necesarily take time to settle down and, in the meantime, many anomalies must ensue. But with a measure of mutual compromise, it is to be hoped that in due course a new scheme which is in the best interests of the nation at large, may result. At any rate, that is the fervent hope of those engaged in the Gas Industry.

RESIDUALS.

Coke.

The position of the coke market until a year ago had given little cause for serious concern. The demand had more than kept pace with the supply, due in large measure to the heavy demands of industry in this country and the requirements for export. But curtailment of the latter, a reduction of the demands of industry at home, and the necessity of finding an outlet for increased production of coke-oven coke have materially altered the position within the past year with a recurrence of the periodical inter-competition between gas undertakings to the detriment of all.

The position in regard to the export market has been stabilized by formation of the Coke Export Association. The establishment of a Coke Association in Scotland for the purpose of regulating and controlling the sale of Inland Coke along the lines of those in operation in England, with co-ordination through a national organization, would appear to be overdue. The home market is dominated to a large extent by the heavy producers, and essential to the formation of a Coke Association is the co-operation of—if not the primary formulation of a scheme by—the large producers.

Tar.

That the co-operative scheme for the disposal of tar has been beneficial to the Gas Industry in Scotland is undoubted. Better prices have been realized in consequence and a minimum of difficulty has been experienced in the disposal of this residual, notwithstanding exceptional difficulties which have to be faced by the distillers in finding outlets at the most remunerative prices, and in meeting the exceptional degree of competition with competitive materials for road-making, consequent upon the inroads in this direction by bitumen and asphalt, not to speak of the increasing adoption of concrete for road construction in various parts of the country.

That a greater degree of success has not been attained is attributable no doubt to the failure to bring about 100% co-operation producers. This failure is to be deplored, but

I trust before long may be rectified, and a yet greater measure of success achieved.

In this connexion the crisis of last autumn compelled one to take thought of the position which would arise in this country in regard to road upkeep and repair in the catastrophic event of an outbreak of hostilities, when resort to home-produced commodities would be compulsory. The British Road Tar Association continues to carry on excellent propaganda work for road tar.

Ammoniacal Liquor.

The chief purpose of my reference to this subject is to make mention of the very exhaustive report in regard thereto, which has been published by The Institution of Gas Engineers in book form under the title "Gas-Works Effluents and Ammonia," by Dr. Arthur Key.

This investigation has been carried on over a number of years with a considerable degree of thoroughness, but unfortunately with little positive result. The book will prove of immense value, however, to those who may find themselves in difficulty with the disposal of ammoniacal liquor.

Education.

It is satisfactory to note that the number of students coming forward annually to sit for the examinations in Gas Engineering and Gas Supply continues to increase. The Gas Industry in Scotland has contributed for several years towards the cost of the courses held at the Royal Technical College, Glasgow, the Heriot Watt College, Edinburgh, the Dundee Technical College, and the Technical School, Kirkcaldy.

Those in responsible positions in the Gas Industry must see to it that students who have prepared themselves for responsibility are suitably recompensed and rewarded for their efforts and enthusiasm and given preference when suitable openings occur.

The Industry is indebted for the prominence given to the subject of education, training, and, particularly, to the question of adequate remuneration, by Sir Frederick West in his William Young Memorial Lecture. It is understood that the salaries question is under active consideration by the District Associations and by the parent Institution, and it is to be hoped that a suitable solution to the problem will soon be forthcoming, because young men of parts are not likely to come forward unless years of study and preparation are to be adequately rewarded.

Distribution.

The extensive development which has taken place within recent years, particularly in the form of new housing estates in outlying districts, has given rise to considerable anxiety as to the adequacy of the intervening trunk mains. The additional gas is required chiefly for domestic heating and cooking, and the demand is characterized by marked peaks.

The problem is probably best dealt with by the provision of high-pressure feeder mains, but, whether handled in this manner or by enlargement of existing trunk mains, the cost of laying, to which must be added that of road reinstatement, is a very heavy item. When, therefore, this work must be undertaken, it is well to provide new mains of ample capacity. The trend towards higher coal prices with lower prices obtaining for coke and residual products may result in modification of present-day manufacturing practice, and a tendency towards reduction of calorific values, increasing thereby the demand upon the carrying capacity of mains. Nor are we by any means at the end of the increase of domestic consumption, which may very well grow until gas is used for all domestic heating and cooking purposes to the exclusion of solid fuel, while the potentialities of gas for industrial uses may be said to be scarcely yet realized.

The provision of a high-pressure main in the first instance is the better method, if only because of the ready possibility still further to increase its capacity by increasing the working pressure. The maintenance of a moderately higher pressure in the ordinary distribution system, which increasingly becomes the general practice to overcome inadequacies of existing main and service pipes, is also thereby facilitated.

Safety Rules for Gas-Works.

The Institution of Gas Engineers has now appointed a Committee to deal with the important subject of safety rules for gas-works under the able Chairmanship of Mr. F. M. Birks, of the Gas Light and Coke Company. Their first report was issued to the Autumn Meeting last year. The Committee considered the provisions of the Factories Act of 1937 which came into force last year, and took steps to claim exemption from some of the stipulations. It cannot, however, be denied that there are some of these regulations which should be carefully perused if penalties are to be avoided. Among these are the provision of guards to all gearing, whether considered dangerous or not, the safety devices now considered necessary in lifts and hoists, and the periodical examination of all cranes and lifting appliances.

The Committee has drawn up voluntary rules for the safe operation of purifiers, and engineers would do well to make these rules, or some modification of them, compulsory within their own works.

Air Raid Precautions have been dealt with in a separate publication, issued in July, 1938, which was drawn up in collaboration between the Committee and the cognate department of the Home Office. This urgent problem will have to be tackled by every one of us in the light of local conditions, but it is to be feared that anything like complete protection is impossible.

No doubt every responsible official in the Gas Industry has made a careful study of A.R.P. Memorandum No. C1, in which the precautions recommended for use of gas undertakings are particularly dealt with. Fortunately, we have not had the opportunity of learning in actual practice to what extent these measures will prove effective in mitigating damage from air raids. May it be long before we have that experience.

Sales and Salesmanship.

It may be that the subject to which I come at the end of this Address is the most important of all. At any rate, no subject is being more widely discussed, and there is no subject upon which finality seems less possible.

Competition increases. There is, however, no more hopeful sign than that the Gas Industry would appear to have overcome that feeling of pessimism which threatened to overwhelm it at the original onset of intensified competition. A quiet confidence in the superiority of gas over its rivals for all industrial and domestic heating purposes now prevails.

The expression of this confidence is in the hands of the salesman. The gas salesman is no longer a mere novice, but one who has made a study of his calling and been given to understand the importance of his place in the Industry. No greater change in the outlook of gas undertakings can be noted than that of the relative position of the gas salesman in the organization of the Industry to-day. More and more, too, apart from executive duties, the gas manager of to-day tends to be occupied with the endless problems arising in the application of gas to its multifarious uses in home and factory.

The progressive sales policy which now characterizes the Industry is well demonstrated by the many spacious and well-equipped showrooms which have been erected in numerous towns and districts throughout the country. These showrooms are generally situated in the best shopping centres, and they display modern gas appliances, particularly domestic gas appliances, attractively and to the best advantage. They are freely visited by consumers who are able to obtain from courteous attendants first-hand information with practical illustrations of what modern gas appliances can accomplish in improving the amenities of the home, and see for themselves how they can adorn the house and fit in with modern ideas of artistic furnishing. That this method of appeal to the public is effective and gaining in momentum is shown by the increasing sales of gas appliances for an ever-increasing variety of uses by nearly every gas undertaking.

Sales development has thus become a very complicated and also very remunerative business, calling for technical training and sales ability on the part of those to whom it is entrusted. Undertakings are beginning to realize that it is worth while to engage men and women of good education and address, and to train them in this side of the business. Necessarily, if the right quality of personnel is to be obtained, suitable inducement in the way of salary and prospects must be offered.

Nor must we forget to acknowledge the powerful and use-

ful support which is given to the sales department by the excellent publicity methods and material assistance provided by the British Commercial Gas Association, a body which should be supported financially by every gas undertaking. The publicity in the National Press and in the better-class magazines and periodicals is doing a great deal to impress upon the minds of the general public the fact that gas is modern and up-to-date. Gas consumers are now assured of the comfort and convenience, as well as the healthy ventilated atmosphere promoted by the modern gas fire, that it is an object of beauty and a decided asset in any room, and that the gas cooker in the kitchen and the water heater in the bathroom are clean, smart-looking articles of equipment, thoroughly up-to-date and efficient in every way.

I should like also to pay tribute to the excellence of the Technical Press by which the Gas Industry is served. Many of us are prevented by the multiplicity of our duties and by the geographical positions of our Undertakings from participating often in the actual meetings of The Institution of Gas Engineers and other Technical Associations, or of visiting other gas-works to inspect for ourselves the work which is being done by our technical colleagues, but with the assistance of the Technical Press we are able to keep up with the advances made in technique from day to day and abreast of the discussions upon which the development of the general policy of the Industry is based.

Vote of Thanks.

Mr. A. KELLOCK (Airdrie), proposing a vote of thanks to the President for his Address, said: The President has made the proud claim, and rightly so, that this Burgh has been the cradle of many pioneers in our Industry. The roll of our Association also includes names of many who have gone forth from this town to achieve distinction and high honour in the Gas Industry.

A distinguished predecessor of our President in the management of Leven Gas-Works was Mr. John Lowden, whose memory we shall revere as one of our founder members and first President for the initial years of 1862 and 1863. Leven claims a distinguished predecessor of myself in the office of Secretary and Treasurer of the Association in the person of Mr. David Terrace. Mr. Terrace was our second Secretary, which position he held for seven years, resigning in 1886 to become Vice-President and thereafter President in 1888. The tradition of the Terrace family still survives with Mr. John Terrace, who was President in 1929 and is now Honorary Secretary of The Institution of Gas Engineers. This precedent created by Mr. David Terrace was followed by my immediate predecessor, Mr. David Fulton, and I am now well on the way to providing the third President who has been Secretary and Treasurer. There are many names of these early days which could be recalled, but one we must not forget is that of Mr. Alex. Wilson, who ultimately became Engineer and General Manager of the Glasgow Gas Department. After his retirement he returned to his native town and became Chairman of Messrs. Henry Balfour & Co., whose works we are to visit this afternoon. Just a fortnight ago Leven was honoured again when one of its sons, Mr. J. G. Aitken, took over the post of Engineer and Manager at Carlisle. We wish him well, and I am sure you are delighted to welcome him to-day and to know he is joining our Association. The Golf Circle are indebted to his father for the happy arrangements he made for their enjoyment yesterday. My last word of bygone Leven must be a personal one, and I make it with due diffidence. My own forbears sprang from Leven, and my paternal great-grandfather died at the Siller Hole at the ripe old age of 90.

In passing from sentiment to reality I wish to congratulate our President on his Address to-day. I re-read his Paper of 1931, then this Address, visited his Works, and I do admire the manner in which he got down to his job of reconstruction and development. Mr. Aitken assumed his present position at the close of a prolonged strike which had created for his Undertaking a heavy deficit. The two Works were operating at full capacity; the distribution network was inadequate for what it was called upon to bear. The future was bristling with difficulties. But our President was not dismayed. Careful thought and consideration were applied, and from chaos there arose in the following years a purpose and orderliness which have brought his Undertaking to the fore as a commercial and practical success. Further, it has justified the hopes of the Buckhaven and Leven Gas Commissioners in their initial principle and ideal—viz., co-ordination of the local gas supply. Incidentally I have to compliment the Commissioners on retaining our President in their service. I do think a Committee or Board of Directors always benefit by retaining and encouraging an Engineer who displays foresight, is prudently progressive, spends wisely, and has vision for the future. The Commissioners have not been lacking in their part in their appreciation of his services.

And to ourselves who are visting or re-visting the East Neuk of Fife, I am sure this meeting will act as a stimulus. We have paid tribute to the founders of the Association and our first President. We are grateful to them for what they then did. There is an old Scottish adage which says "Put a'stoot' he'rt to a stey brae." This the President must have had in mind when he came to Leven, and his narration of the methods of tackling his difficulties is an incentive to all. Our visit this afternoon will be a further demonstration of the rise and progress of our Industry's constructional development.

Mr. R. D. KEILLOR (Greenock), seconding the vote of thanks, said: I should like first of all to thank you one and all for the honour you have conferred upon me by electing me your Junior Vice-President.

Mr. Aitken's Address is typical of the modesty of our worthy President. Throughout, the personal pronoun is conspicuous by its absence. This is an example which many of us, who do not have nearly so much in the way of useful accomplishment to crow about, might well take to heart. Our President records an increase of 40% in gas sales over the last seven years, annual appliance sales approaching the £5,000 mark, and in the same period a resolute programme of steady development in the works and on the distribution system. In spite of the cost of developing his Undertaking along modern lines, Mr. Aitken has maintained substantial balances in his Renewals and Reserve Funds, while at the same time bringing about a very substantial reduction in the price of gas. No gas manager could claim to have rendered better service to his Committee and to his customers.

Mr. AITKEN, replying, said that if his Address had won the approval of the members he was more than compensated. He wished to take the opportunity of mentioning that this was the last meeting which Mr. Kellock would attend as Secretary and Treasurer. His services had been valuable and given without stint, and it was not too much to say that much of the success of the Association was due to the capable manner in which Mr. Kellock had carried out his duties. The Council had appointed Mr. Robert Sturrock, of Ardrossan, to succeed Mr. Kellock as from July 1, and he was confident that Mr. Sturrock would do his utmost to emulate the fine work of his predecessor.

Mr. KELLOCK, replying, said that after ten years as Secretary and Treasurer he felt it was time he went out. His friends, however, thought he should first occupy the chair, and if his work as President was as satisfactory to the members as his work had been as Secretary, he would be content.

This Cannon Gas Cooker Display at the Bilston Gas Showrooms linked up with a well-known film at the Bilston Cinema. The Display, which was duplicated at the Cinema, created a great deal of interest in gas cooking, and provided excellent publicity for the Industry in the district.

London Juniors Visit Nine Elms

EVEN if Battersea is no longer "a land of flowers, fruit, and market produce" as it was when gas first came to central London 130 years ago, it can boast of a gas-works which is a model of efficiency and cleanliness. Such, at any rate, was one of the chief impressions left with members of the London and Southern District Junior Gas Association after a visit to the Nine Elms Works of the Gas Light and Coke Company on April 15.

The present area of the Works is 20 acres, of which 17 are used for gas-making plant. It is bounded on the south by the Southern Railway, whose sidings are connected at two points with the Works railway system. The northern portion of the Works, which adjoins the River Thames, is occupied mainly by coal unloading plant and coal stores, and is separated from the remainder of the Works by Nine Elms Lane. The outer and inner docks are linked by a canal under the roadway. The maximum daily capacity of the Works is 21½ million cu.ft. of coal gas and 8 million cu.ft. of carburetted water gas.

Coal is brought direct from the north by five of the Company's colliers. These have each a carrying capacity of 1,200 tons, and when unloading are berthed in an open dock, constructed at right angles to the river. Above the dock is a gantry, on which are three hydraulic cranes, each having a capacity of 60 tons per hour. Hydraulic power, at 1,000 lb. per sq.in., is supplied by three condensing pumping engines. Steam is supplied by two Lancashire boilers. From the receiving hopper on the gantry, coal is delivered to the various retort houses by a system of belt conveyors, having a total length of 1,630 ft.

The carbonizing plant consists of four retort houses. Nos. 1 and 3 are similar in construction, each house containing 18 beds of 10 horizontal retorts. Charging and discharging in No. 1 retort house is by Fiddes-Aldridge machine, and in No. 3 house by De Brouwer charging and discharging machines. The capacity of each of these houses is 270 tons of coal, or 3,400,000 cu.ft. of gas per 24 hours.

NINE ELMS WORKS

FIGURES FOR 1938

Coal carbonized	370,400 tons (over 1,000 tons a day)
Oil used...	240,000 gallons
Gas made—	
Coal gas	5,474,500,000 cu.ft.
Carburetted water gas	483,458,000 cu.ft.
Tar made	4,315,600 gallons
Ammoniacal liquor made (10 oz. average strength)	97,812 butts of 108 gallons
Crude benzole made	408,500 gallons
Coke sold to outside customers ...	156,000 tons
Number of men employed on works	600

No. 8 retort house contains an installation of 112 Glover-West 40-in. retorts, in two benches, giving a throughput of 450 tons and yielding 7 million cu.ft. of gas a day. A special feature of this house is the bracing, each setting being held at back and front by a "mattress" of three auxiliary buckstaves, held at top and bottom by cross joints, resting in adjustable brackets on the main buckstaves. No. 7 retort house contains an installation of 120 Glover-West vertical retorts, similar to those in No. 8 house, but its capacity is 7¼ million cu.ft.

There are four C.W.G. plants. Each is equipped with self-clinkering grate, boiler generator, back run process, and waste-heat boiler, the valves being operated by hydraulic power. One set is automatically controlled, and has a capacity of 2½ million cu.ft. per day; the other three sets each produce 1¾ million cu.ft. daily.

Naphthalene is removed from coal gas only, by washing in rotary washers, after it leaves the purifying plant. This plant is also used for the extraction of benzole. The present plant comprises two separate units, one dealing with horizontal retort gas, and the other with vertical retort gas. It is capable of removing about one gallon per ton.

A new benzole plant now in course of erection will be capable of stripping 22 million cu.ft. of coal gas per day. The tower scrubbers will be built between the gas de-hydration plant and the meter house, and the still, pumps, tanks, and other auxiliary plant will stand alongside the present benzole plant.

The gas dehydration plant, having a capacity of 30 million cu.ft. per day, deals with the whole of the gas made and is situated on the outlet of meters. There are two horizontal rotary brush washers, with cast-iron coolers and evaporators, storage tank for calcium chloride, and steam pumps for circulation. A water cooling tower is used in conjunction with this plant.

There are three electric generating stations. In No. 1 generator house are five dynamos, three of 42 kW and two of 38 kW driven by gas engines. This unit is only used as a standby plant. No. 2 generator house consists of two high-speed condensing engines, each driving a generator of 300 kW. No. 3 generator house contains two 500 kW turbo-generators. The voltage is 230 D.C., and the generator houses are all connected together.

There are three gasholders on the Works, two of about 1¾ million cu.ft. each, and one of one million cu.ft. capacity. At Battersea there are three water-sealed gasholders—two of 1½ million cu.ft., one of 2½ million cu.ft. capacity, and there is also a waterless gasholder of 7 million cu.ft. capacity. The total working capacity of all the holders is about 16 million cu.ft.

Each retort house has its own coke handling plant and storage hoppers. All hoppers are capable of supplying railway trucks, as well as road vehicles, and, in the case of the vertical houses, de-breezers are used when loading sacks. The auxiliary coke plant is used for cutting and grading coke from stock or from the various coke plants.

A new building, built in 1934 on the site of the old workshops, has a superficial area of 9,000 sq.ft., and accommodates the engine fitters, platers, smiths, electric welders, foreman's offices, and tool stores. It is well equipped with modern tools, including two electric welding machines, one of which is mobile.

A.R.P. measures are well advanced at the Nine Elms Works. Individual shelters are provided for key men, while the space underneath the loading platform of one of the coke plants has been bricked in and adapted to accommodate a large number of personnel. On the section of the Works adjoining the River, very roomy underground shelters have been constructed.

Entertained by the Company.

Following the inspection of the Works, the Association were entertained at tea by the Gas Light and Coke Company in the very fine Works Institute. Mr. N. WILLSMER (Station Engineer) presided, supported by Mr. S. C. Waldock (President of the Association) and other officers and members of the Council, and by Mr. G. le B. Diamond (Vice-President of the Southern Association of Gas Engineers and Managers).

Proposing a cordial vote of thanks to the Gas Light and Coke Company for the opportunity of visiting the Works and for their hospitality, Mr. WALDOCK referred with pleasure to the presence of Mr. Diamond, who was representing the President of the Southern Association—with whom, of course, their own Association was closely associated. Continuing, Mr. Waldock spoke of the gratification it had given them to visit the Nine Elms Works, and his own personal pleasure at coming back to the Works where he began as a junior clerk 41 years ago. On behalf of the Association, he thanked the Directors of the Gas Light and Coke Company for the invitation and Mr. Willsmer and his staff for their kindness. The visit had been of great interest and educational value.

Mr. H. MOYS (Commercial Gas Company) seconded the vote of thanks, referring to several points of interest in connexion with the Works, including the very adequate A.R.P. measures which had been in evidence. The latter, he said, provided an example for them all.

Responding, Mr. WILLSMER first apologized for the absence of the Chief Engineer, Mr. R. W. Hunter, who was very sorry not to be able to be with them that day, but who had asked Mr. Willsmer to convey his best wishes to the members and to say how much he valued the work of the Junior Association. It was hardly necessary for him to say, went on Mr. Willsmer, that the Directors of the Gas Light and Coke Company cordially welcomed visitors to their Works or to any other section of the Company; but especially did they welcome visits from technical associations like theirs—from those who were playing so important a part in keeping the Industry abreast of the times. Mr. Willsmer also voiced his pleasure at the presence of Mr. Diamond, who was well-known everywhere as a great enthusiasf. What greater evidence of that enthusiasm was needed than the fact that Mr. Diamond had come up from Folkestone to Nine Elms to look round a gas-works on a Saturday afternoon?

They regarded it as a great compliment, observed Mr. Willsmer, that the Association had visited the Nine Elms Works. They had nothing very spectacular to show them—but they could put out 30 million cu.ft. of gas a day. He mentioned the fact that the coal cranes handled over 370,000 tons of coal per annum, and during the thirty years they had been at work they had unloaded 7½ million tons of coal—a tribute to their makers and those responsible for their maintenance. But of one thing at Nine Elms he was particularly proud, said Mr. Willsmer in conclusion—namely, his staff; and all of them were very glad to have the Association with them that day and pleased to know that the members had enjoyed their visit.

THESE ★ FEATURES SELL COOKERS

The Cannon Henley, incorporating every worth-while feature of modern gas cookers, is achieving remarkable success among housewives. Every one of these features is a **real** selling feature, and means more satisfied consumers for the gas industry.

★

APPEARANCE	Modern, streamlined cooker, with flush fitting door, for easier cleaning. The door knob and "Autimo" head are made of bakelite.
FOLDING PLATE RACK	The cooker can be supplied with a cover top fitted with a folding plate rack, which automatically locks into the cover before closing.
HIGH-SPEED GRILL	The High-Speed grill heats up from cold in 60 seconds.
EASE IN CLEANING	There are no gates, and the embossed cast-iron enamelled sides are easy to clean.
COLOUR	The cooker is available in a wide range of attractive colours.
"AUTIMO"	Fitted with Cannon "Autimo" Oven Heat Control, which ensures successful cooking.
"PORCELIRON" FINISH	Beautifully finished in exceptionally durable glass-smooth "Porceliron" enamel.
MAINTENANCE	A feature of great importance to Gas Companies is that if a side panel of the cooker is damaged it can be removed without disturbing the packing.

You will be welcome at STAND 138
Ideal Home Exhibition, Earl's Court,
April 11th to May 6th.

The CANNON Henley

"Looks Better-Cooks Better-Sells Better"

Cannon Iron Foundries Ltd., Deepfields, Nr. Bilston, Staffs. **London: Thames House, Westminster, S.W.1**

COMPANY MEETINGS

South-Western Gas and Water Corporation

The Fifth Ordinary General Meeting of the South-Western Gas and Water Corporation, Ltd., was held on Friday, April 14, at 9, Clements Lane, London, E.C. 4, Mr. R. B. H. OTTLEY (Chairman of Directors) presiding.

The REPRESENTATIVE of Messrs. Close Brothers, Ltd. (the Secretaries), read the notice convening the meeting, together with the report of the Auditors.

THE CHAIRMAN'S ADDRESS.

The CHAIRMAN, moving the adoption of the Report and Statement of Accounts for the year ended Dec. 31, 1938, said:

Ladies and gentlemen,—The Accounts covering the year 1938 have been in your hands for some days, and before commenting upon certain items therein, there is a matter to which I should wish to allude.

Sir Francis Goodenough informed us during the autumn of the year 1938 that, for considerations of health, he found it incumbent upon him to tender his resignation as a Director of the Corporation and this was accepted to take effect from the end of the year 1938. I should like to take the opportunity of expressing to Sir Francis, on my own behalf and that of my colleagues on the Board and of the shareholders, our thanks to him for the services he has rendered to the Corporation in the past and our best wishes for his speedy recovery.

There are a few points in the Accounts to which I would like to draw your attention. The issued Share Capital remains practically unchanged at £638,624.

No further Debentures have been issued during the year.

The Investments in Subsidiary Companies show a slight increase chiefly accounted for by the investment in the new Glastonbury and Dursley Companies to be referred to hereafter, and a call on shares in the Shaftesbury Company.

The only matter of note, however, to which I feel it is proper to call the attention of the shareholders is the item "Investments in other Companies" which are shown in the Accounts at cost, but as valued by the Directors as at Dec. 31, 1938, show a depreciation of some £45,000. These investments were made in an early stage of the Company's history, and insofar as they consist in holdings in gas, electricity, and water undertakings, have stood up pretty well on the whole to the depressed conditions through which all markets have been passing.

By far the largest amount of depreciation occurs in a large holding of ordinary shares in United Gas Industries, Ltd., and I must be forgiven for questioning the wisdom of the Corporation in having tied up so substantial a sum of money in an industrial holding, even one so closely allied with the Gas Industry, and however promising in nature. In point of fact, United Gas Industries is an excellent Company run under the highest auspices, but not only have its shares suffered, like almost every other industrial share of its class, but it has encountered difficult trading conditions and its dividend was reduced last year by 1% to 11½%, and indeed the interim dividend for the present year was reduced by ½% to 4½%. I am not unhopeful that, with the general return to confidence, some part at least of this depreciation will be recovered; but I feel it incumbent upon me to draw the attention of the shareholders to facts as they are at the present moment.

Guidance for U.K. Central Administration.

A great deal of work has been done under the guidance of the Central Administration of the United Kingdom Gas Corporation, who have given to the South-Western Gas and Water Corporation, Ltd., the benefit of all their contracts covering not only items bought for re-sale—*i.e.*, fittings and appliances of every description, but also every type of material used in the Manufacture and Distribution of Gas.

Assistance was also given to our Corporation in the matter of engineering work in design, reconstruction and repair of plant, technical assistance and advice in obtaining new industrial loads, organization of sales campaigns, exhibitions, publicity, and advertising, and in addition assistance in connexion with the sale of residual products and purchase of coal. It may be fairly stated that the net value of the assistance given greatly exceeds the charge for the services that has been made against this Corporation.

The amount of gas sold during the year was 692,400,000 cu.ft., representing a decrease of ¼% over the gas sold in 1937. I think it will be fair to say that this decrease could be more than accounted for by the very mild weather experienced during the year 1938 which on all sides was admitted to be a bad gas year.

The Dursley Gas Company (1938), Ltd., and Glastonbury and District Gas Company, Ltd., appear in the list of our Constituent Companies for the first time. The former has been incorporated in connexion with proposals now being submitted to the Board of Trade for a reconstruction and increase of capital to meet expansion in the District. The latter has been formed to operate the Gas Undertaking of the Glastonbury Corporation as soon as the transfer is approved by the Board of Trade. It is hoped that the necessary order will be granted at an early date. I referred to the acquisition of this Undertaking in my speech last year.

The Contingent Liabilities in respect of uncalled capital concerning which a note appears in the Balance Sheet refer to shares taken up in the above Companies.

In regard to the Statement pursuant to Section 126 in the Companies' Act, the three Companies which show a loss are Padstow and St. Columb, Camborne, and the General Engineering and Construction Company, Ltd. With regard to the first, we have every reason to hope that steps already effected in regard to Management and reduction of overheads will correct this position. The Camborne Company showed a small net profit for the year, but the carry-forward was reduced by reason of the writing-off of a substantial sum of money, chiefly in respect of repairs and maintenance, which had been carried forward in suspense in last year's report. Again the position here should be materially improved if certain contracts entered into for the sale of tar come up to expectations.

Generally speaking, the year 1938 has been characterized by the pursuance of the policy for consolidating the Units and the introduction of the services of the Central Administration on a regional basis.

Coal Costs.

The Corporation has had to face in common with practically the whole of the Gas Industry further increases in the cost of coal during the year, up to 3s. 6d. per ton. The greatest attention, therefore, has been focused upon the improved preparation and marketing of coke, tar, and tar products of the Constituent Companies, all of whom are now members of the London and Counties Coke Association, whose scheme for the regulation of coke prices has proved of considerable value.

Your Directors feel that in circumstances that have, on the whole, been unfavourable to the Gas Industry, your Corporation has, during this year, made definite progress and they would like to acknowledge the valuable services of Mr. Allen, who is responsible for the Central Administration which is now situated in Bristol, and I feel sure that I should be voicing the sentiments of Mr. Allen, who is perhaps in a better position to judge than any of us, if I and my colleagues were to express our sense of obligation to the United Kingdom Gas Corporation's Central Administration for the assistance that they have rendered to us during the past year.

I should not like to conclude my remarks without an expression of appreciation of the work done by the local Boards of Directors and the Staff of the Constituent Companies, and the members of the Secretariat in London.

The Report and Accounts were unanimously adopted and the dividends paid and recommended were confirmed and approved.

The retiring Directors, Mr. C. Holmes Hunt and Mr. F. C. St. Aubyn, were re-elected.

The Auditors, Messrs. Deloitte, Plender, Griffiths & Co., were re-appointed.

Hong Kong and China Gas Company, Ltd.

The Annual General Meeting of the Shareholders of the Hong Kong and China Gas Company was held at the Company's Offices, 148, Gresham House, Old Broad Street, E.C., on Monday, April 3, 1939—Mr. ROBERT H. GLEN, F.C.A. (Chairman), presiding.

The ASSISTANT SECRETARY (Mr. F. W. Edwards) read the notice convening the Meeting, together with the Auditors' Report, and the Report and Accounts were taken as read.

The CHAIRMAN, moving the adoption of the Report and Accounts, said: The year under review has been one of difficulty for the Company, but I hope my remarks will convince you that our problems have been handled in a satisfactory manner and that the Company has come through its trials very well.

I told you at our last Annual General Meeting of the expensive coal we had had to purchase and intimated to you that the effect of this would be felt during the year 1938. A glance at our Hong Kong Revenue Account will show a figure for coal carbonized over 150% more than the previous year's figure, although less coal was used. We were forced to raise the price of gas by 50 cents per 1,000 cu.ft. as from April 1, 1938, but this did not nearly reimburse us for the extra cost of coal. Our consumers realized the justification of the increase and our gas sales were not adversely affected. On the contrary, the influx into the Colony from the troubled areas of China of both refugees and capital has meant the opening up of factories, &c., and more rapid development of residential property, from which we have benefited. You will be pleased to hear our gas sales totalled almost 6% more than for year 1937, and the indications this year are that the 1938 figures are being maintained. We had to contend with a drastic curtailment of water supplies, affecting the use of geysers and similar appliances, owing to record low rainfall in the Colony, so our sale of gas figures are, in our opinion, really most satisfactory.

As regards the future prospects of Hong Kong, we find a general feeling that there is no reason for pessimism, and we are glad to see that this opinion is reflected in the speech by the Chairman of the Hong Kong and Shanghai Banking Corporation at the Annual Meeting of its shareholders. I have just mentioned the transference of business into Hong Kong and I would just add two further facts as indicative of the confidence in the Colony, first, the remarkable steadiness of the Hong Kong Exchange—it varied very little from 1s. 2⅞d. during the year—and second, the Government sales of land were materially higher in 1938 than for the previous five years. The currency and finances of the Colony are sound and last year's trade figures were good. In terms of sterling the total visible trade increased by 4·5% in 1938 as compared with 1937 and by 38·1% as compared with 1936.

Before passing on to the Accounts, I would like to refer to the services of Mr. J. H. Taggart, O.B.E., whom we appointed in March last year as Chairman of our Local Committee. His great experience in local affairs has enabled him to put forward dependable views which the Directors have found of much assistance.

Turning now to the Accounts, I will comment briefly on the figures submitted to you.

The Capital Account shows a figure for additions of £1,000 19s. 1d., which is for new mains and services, less depreciation of motor cars, &c.

The first item in the Revenue Account is coal carbonized, $406,534, to which I have already referred. The previous year's figure was $160,228 for 787 tons more coal. Carburetted water gas manufacture shows an increase of $8,742. More water gas was made, and the coke used was charged at a higher rate. The next figure for comment is $169,573 for working expenses. This is $5,748 less than 1937 and nearly $20,000 less than the year before that, the result of re-organization which has in no way impaired the efficiency with which the works and offices are run.

Maintenance of retorts and C.W.G. Plant cost $18,156, as compared with $11,491. The fluctuation in this account is nullified by the transfer to our reserve for retorts renewals, &c. Upkeep of mains cost $10,601, about the same as in the previous year, whilst there is an increase in works maintenance of $4,670. In 1936, however, the figure was $84,036. Fittings repairs at $37,025, is slightly under the 1937 cost. Our figure for bad debts is a particularly low one, $318.

Publicity cost us $4,312 or $797 more than the year before, which increase is partly accounted for by special cookery demonstrations. The attendances at these demonstrations were very gratifying and the results warranted further similar ventures. Last year the audiences consisted mainly of the better-class Chinese and also a number of European ladies, while this year, in repeating the demonstrations, we have also arranged classes for cook boys.

Interest on our Bank Loans in Hong Kong was $27,361, as compared with $21,387 in 1937, reflecting the increased accommodation afforded by the Bank. The amount written off obsolete fittings, &c., was $10,516, as against the previous year's figure of $24,479. Less scrapping of apparatus was necessary last year after a heavy charge for this in 1937. Our showrooms at $19,733 cost about the same as in the previous year.

Bonus to staff and workmen is less on account of the balance of Revenue Account being down, although, as our staff is smaller, our people in Hong Kong did not individually suffer a comparable reduction. The next two items for depreciation are very much the same as for year 1937.

On the credit side of the Hong Kong Revenue Account, gas rentals is higher by $160,427. I have told you that the price of gas was increased as from April 1, 1938. Our sales, however, rose at Hong Kong by nearly 5½ millions, and at Kowloon by nearly 10 millions, our best total figure since 1933.

Meters and fittings rental has increased from $84,476 to $94,486. The number of our consumers at Dec. 31 last was 219 more than at Dec. 31, 1937, and we had more appliances out on loan. A contributory item included under this heading is a number of additional public lamps erected during the year in Hong Kong. The next heading is residual products, $174,850, as compared with $129,703. This increase is due to a bigger demand for our by-products, and also the increased prices we charged to assist in meeting the extra coal cost. Demand is still good, and we have this year actually imported tar to keep our customers supplied promptly.

The credit balance carried down is $311,714, which when converted at the average rate of exchange for the year brings £19,319 to the credit of London Revenue Account. The previous year's figure was £21,348, but in 1936 it was £13,983.

In the Net Revenue Account the National Defence Contribution figure £366 represents a larger reserve for this charge, against which has been set an overestimate for the previous year.

Proceeding to the Balance-Sheet, our general reserve and exchange reserve remain unaltered at £30,342 and £9,961 respectively. Sundry creditors is £12,605, as compared with £23,772, the latter figure including an account for a shipment of coal. We had a shipment of coal at end of year 1938, and it is this that is responsible for the increase in our loan from our Hong Kong Bankers. I might here refer to the assistance we obtain from our Bankers both in Hong Kong and London. The Loan incurred for our new works in Kowloon is being reduced at a good rate and our Hong Kong Bankers have always been prepared to make advances for coal purchases.

You will see the value of our stock of coal and oil in stores is £10,439, and we have £11,203 worth of coal and stock in transit. These figures together cover coal costing £17,500. The Board have thought it best to carry what are normally excessive stocks of coal and the payments for same are reflected in our Bank Loans.

The Directors are pleased to be able to submit this Report and trust you will agree that the Company has come through a trying year very creditably. I am very glad to inform you that the figures for the current year so far are most encouraging.

The Report and Accounts were adopted, and a Resolution passed proposing a dividend of 5% per annum for the year ended Dec. 31, 1938.

Mr. ROBERT H. GLEN was re-elected as a Director and Messrs. CASH, STONE, & Co. were re-elected as Auditors.

£90,000 Order for Gas Mains

For West Yorkshire Gas Grid

United Kingdom Gas Corporation, Ltd., has placed with the Stanton Ironworks Company, Ltd., of Nottingham, at £90,000 order for 52 miles of high-pressure gas mains. This is among the largest contracts of its kind ever placed in this country.

The mains will be used for the Corporation's West Yorkshire Gas Grid. The order comprises more than 20,000 large diameter pipes weighing up to 16 cwt. each and individually tested to withstand an air pressure of 60 lb. per sq.in.

Palestine's First Gas-Works

Palestine's first gas-works in its long history is to be built by Close Brothers, the finance and investment house, of Clement's Lane, E.C. 4, states the *Financial Times* for April 11. Close Brothers are the technical advisers to the newly formed Tel Aviv Gas Enterprises Company.

The latter Company, which has a capital of £300,000 and will make a debenture issue, has been granted a concession by the Tel Aviv Municipal Council to provide a gas supply in that city. Construction of the works and installation of house equipment is to be undertaken shortly.

Midland Juniors Visit Staveley

About 50 members of the Midland Junior Gas Association visited the Works of the Staveley Coal and Iron Company on March 16, when an inspection was made of the laboratory, specials and fitting shop, the sand-spun and metal-spun plants, and the gas engines.

The visitors were entertained at lunch at the Ringwood Club, the President of the Association—Mr. A. W. Attwood (Coventry)—presiding.

The CHAIRMAN, proposing a vote of thanks to the Directors for their hospitality, said that the plant which they had seen was second to none in the country, and it was still in the process of being improved. The Company had enough work to last them six months without any further orders. The point that interested him particularly was the testing which was carried out in order to ensure that a proper quality commodity was produced.

Mr. W. N. SMIRLES (Birmingham), seconding, said that the members had been greatly impressed by the wonderful diversity of engineering which they had seen. It seemed nowadays that it was very easy to make a thing, but it became increasingly difficult as the years went by to sell it, and selling demanded not only the right price, but the right quality. That was the thing which the Staveley Coal and Iron Company were setting out to impress upon the world and potential consumers.

Mr. T. A. MCKENNA (Assistant Commercial Manager), in reply, apologized for the absence of Mr. D. N. Turner (Managing Director of the Company) and Mr. H. H. Berresford (Director and Commercial Manager), and explained that they had had to attend, at short notice, an important meeting in London. It was in the interests of the Gas Industry, he said, that the junior members of the Association should have an opportunity of seeing at first hand the way in which they produced some of the goods which were used so very largely in the Gas Industry. It was in the interests of the Company that members, who were engineers in the Gas Industry, should be familiar with the efforts which were being made to produce good materials at what they felt was a reasonable price.

Mr. J. B. ALLEN, M.A. (Foundries General Manager), said that it was interesting to note that a very few years ago the Company made 100,000 tons a year of pit-cast pipes and specials. Now the total output was 150,000 tons per annum, of which 35,000 tons were pit-cast pipes. During that period they had had scarcely any increase of the senior staff of the foundry from outside, as their juniors had been brought up to take the more responsible jobs. Regarding the laboratories, a very few years ago they did no micro-photography, and quite a number of things which the members had seen were, a short time ago, either not done at all or done on a very small scale. Yet they had only found it necessary to import one individual, and it spoke well for their staff that they could take on these new jobs and develop them without any outside help.

The visitors were later entertained at tea.

Scottish Junior Gas Association

(Eastern District)

Visit to the Pumpherston Refinery

Some thirty Members of the Scottish Junior Gas Association (Eastern District) visited the Pumpherston Refinery of Messrs. Scottish Oils, Ltd., on Saturday, April 8. The party were met by Mr. Gray (Manager) and members of his staff. Mr. Grant (Chief Chemist) gave a short address on the processes employed, explaining the method of retorting shale in the first place and then the different refining processes undergone by the crude products.

The crude oil is first distilled in pipe-still and bubble tower in the presence of steam. The fractions collected are—

1. Heavy naphtha.
2. Wax-free cut.
3. Wax-bearing cut.

The residue is distilled to dryness in coking stills each of 2,000 gallons capacity. The coking stills have no fractioning columns and the distillate obtained is returned to crude oil. The coke, on account of its low ash content (about 1·0%), is particularly suitable for making carbon electrodes for electric furnaces.

The wax-bearing cut is treated by cooling to extract the wax. The coolers are specially designed double-pipe coolers and the cooling medium liquid ammonia. The cooled oil is filtered through high pressure filters working at 500 lb. per sq.in. The wax extracted is partially purified by sweating, and then finally decolorized by filtering hot through a column of fuller's earth.

The heavy oil freed from wax is blended with the wax-free fraction to give unfinished diesel oil. This fraction is treated by washing with sulphuric acid and then caustic soda and finally distilled in pipe still and bubble tower, the diesel oil fraction being taken out as a tray cut. The light fraction from the distillation of the crude oil is treated to steam distillation for the preparation of solvent naphthas and motor spirit. Sulphate of ammonia is manufactured in a vacuum type plant, the acid used being weak acid recovered in the process of oil refining.

Steam is provided by six Stirling and one Babcock boilers having a total evaporating capacity of approximately 147,000 lb. per hour. These boilers can be adapted for burning coal or heavy fuel oil as required. The usual fuel is pitch (liquid) or tar. Tar is the fuel used for all the distillation processes.

After the tour of the Works the visitors were entertained at tea by the Company, when Mr. R. Cowie, Jun. (Hawick) briefly returned thanks on behalf of the Juniors and thanked Mr. Gray and the members of his staff who had so ably conducted the parties round the works.

Midland Juniors See Film Show

A meeting of the Midland Junior Gas Association was held at the Gas Offices, Council House, Birmingham, on March 30.

The President—MR. A. W. ATTWOOD—mentioned that according to the programme, Mr. H. G. Broadbridge, A.M.Inst.Gas E. (Leamington), was to present a Paper upon "Recent Developments in Control of Continuous Vertical Retorts." He was, however, unable to present the Paper as he had recently left the dis-

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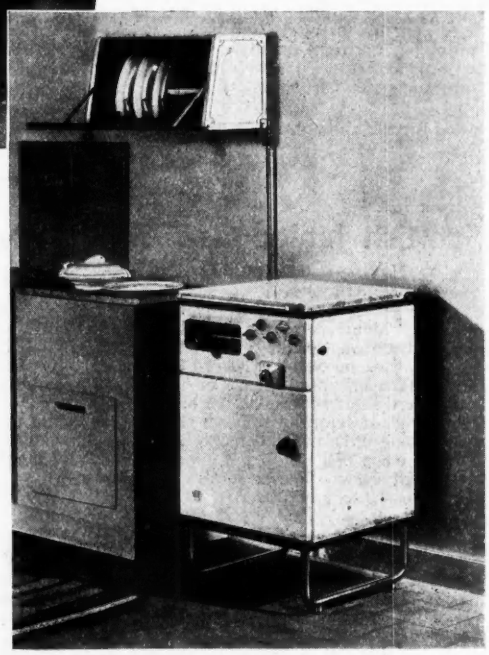

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trict, and in its stead they were to have a display of films by the courtesy of Messrs. Thomas Firth and John Brown, Ltd.

The following interesting films were then presented:

Modern Steelcraft.

Reel 1. A study of making alloy steel in the electric arc furnace, and the production of carbon and steel bars.

Reel 2. The production of carbon and alloy steel castings.

Reel 3. Melting steel by the acid Siemens open-hearth process, and the manufacture of railway tyres and axles.

Reel 4. The production of large forgings including the finishing of a large boiler drum for the new Cunarder, Sister Ship to R.M.S. "Queen Mary."

Manufacture of Tool Steels and Small Tools.

The manufacture of tool steel by the high-frequency induction type electric furnace, followed by the manufacture of all types of small tools.

During the showing of the films a commentary was given by Mr. Norman Sewell, of Messrs. Firth & Brown, Ltd.

Reference was made to Messrs. John Brown's connexion with the shipbuilding industry, which started in 1875 when they commenced to roll large ships' plates. In 1899 the Clydebank Shipbuilding and Engineering Company was purchased, which has grown to be one of the foremost shipbuilding yards of the world to-day.

With regard to steel making, Messrs. Thos. Firth & Sons, Ltd., and John Brown & Co., Ltd., as they were known before the amalgamation took place in 1930, can claim many distinctions, among which their connexion with the railways should be mentioned. Sir John Brown invented and patented the conical spring buffer 90 years ago, and he also produced the first Bessemer steel rails in 1861. Four years later this plant was enlarged and he commenced the manufacture of weldless steel railway tyres, which proved a big advance on the previous type of tyre which was made from iron hoops having a welded joint.

Both Firths and Browns have always been closely associated with armaments. While John Brown was busy making armour plate which could not be pierced for the Admiralty, Thomas Firth, next door, was making shells which would penetrate anything, and so a friendly rivalry existed between the two Companies. By 1875 Firths made forgings for several 100 ton naval guns, but armour piercing shells of chromium steel, which carried a bursting charge, were not obtainable until this Company developed them in 1900, and they have been making them regularly ever since.

A Research Laboratory was erected jointly by the two Companies in 1908. At that time it was thought to be a very risky venture, but has since proved itself otherwise. In 1913 the first stainless steel was produced at this laboratory under the guidance of Mr. Harry Brearly, and the later development of Staybrite steel, which is a household word to-day, was carried out by Dr. W. H. Hatfield, the present Technical Director, in conjunction with Messrs. Krupp, of Germany.

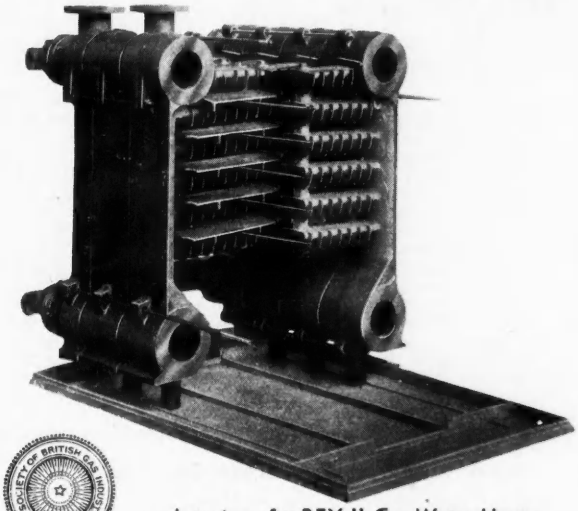
Mr. Sewell made reference to the fact that Thos. Firth & John Brown, Ltd., consume 1,000 million cu.ft. of gas in addition to 150 thousand tons of coal, and 100 million units of electricity, per annum. More than half the electrical energy is consumed by the electric furnaces, and the gas is chiefly used for re-heating and heat treatment purposes.

At the conclusion, Mr. Attwood having had to leave the meeting, MR. W. N. SMIRLES (Birmingham) acted as Chairman, and said how much the Association were indebted to Messrs. Firth & Brown, Ltd., for the very entertaining and instructive display, and to Mr. Sewell for his excellent running commentary. Although in Birmingham steel was used very extensively, whenever the subject was mentioned one immediately thought of Sheffield, and having thought of Sheffield, the name of Firth & Brown automatically came into one's mind. The films had shown that the firm was capable of producing from the smallest to the very largest articles in steel, and also how they looked after the quality of their products. He was pleased to see so many members present and also to welcome the Engineer-in-Chief of the Birmingham Gas Department (Mr. G. C. Pearson) and the Engineers of the various Birmingham Gas-Works, who, although no longer Juniors, showed their interest in the Association's activities.

MR. J. H. DARRAH (Engineer, Nechells Works, Birmingham), proposing a vote of thanks, said he would like Messrs. Firth & Brown to know how much those present had appreciated the opportunity of seeing the films of their wonderful processes, and the ingenious equipment they had designed to handle the heavy castings. The use of alloy steel was increasing in the Gas Industry, and many of the Industry's problems, if viewed with a metallurgical mind, would repay the application of these steels. Once having made up their minds that steel could be used, Mr. Sewell had shown that the firm could accommodate their needs.

MR. F. J. BENGOUGH (Birmingham), who seconded the vote of thanks, said the lecture was of a type never before presented to the Association, and the comments of Mr. Sewell had made it most interesting. The type of machinery and the products shown on the films were quite different from those met with in the Gas Industry, but it was interesting to have an insight into, and realize the ramifications of, a firm such as Firth & Brown, Ltd.

Ideal Home Exhibition, Earls Court



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Please note CHANGE OF ADDRESS from BALHAM on and after April 15th, 1939.

Alleged Maladministration at Southport

The hearing was resumed on April 14 at the Southport Police Court, of summonses against Mr. J. H. Clegg, the Southport Corporation Gas Engineer, and Mr. W. E. Plevin, the Deputy Engineer, alleging conspiracy at the gas-works in illegal practices in the administration of the Gas Undertaking. Reports of previous hearings were published in the "JOURNAL" for March 1, 15, 22, and 29, and April 5.

James Edwardson, in evidence, said that until he retired on pension on Aug. 6, 1938, he had been employed as a foreman at the gas-works at Crowlands for eighteen years. He acted in that capacity under Mr. Bond (previous Gas Engineer) and also under Mr. Clegg.

Witness, cross-examined by Mr. Crichton, agreed that there had been no effort made for years to keep up the proper calorific value of the gas. The chemists never told him at any time when they had had alleged instructions from Plevin to fill the special holder.

Replying to further questions, Edwardson said it was true that at the time of Plevin's appointment, and for some time afterwards, some of the workmen at Crowlands were very lax in their methods.

Mr. Crichton: You will agree that there was very little discipline?—Yes.

The absence of a general foreman made it essential for Plevin to devote a very much larger amount of time to supervising the works, as opposed to gas making, than he would otherwise have done.

Witness agreed that at the time Plevin came to the works mechanical difficulties were heavy.

Mr. Crichton: Would you say that when Mr. Plevin came he set himself to improve the whole position?—Yes.

He instituted a comprehensive scheme of overhaul and replacement?—Yes.

He was particularly interested personally in seeing that these improvements and replacements were carried out?—Yes.

Witness agreed that in addition to mechanical difficulties there were many unnecessary difficulties in the gas manufacturing plant at the time Plevin came, due to want of repair at the proper time.

Mr. Crichton: To sum up, would you agree that Mr. Plevin was making a determined effort to improve the efficiency of the plant and the manufacture of gas generally?—Yes.

In point of fact, the carbonizing system has been considerably improved, as, in fact, the whole plant?—Yes.

Probably you would agree that many of the causes of old troubles have been eliminated?—Yes.

A great deal of the impetus for that improvement has come from Mr. Plevin?—Yes.

Subsequent to December, 1936, witness became conversant with the duties of the chemists and he could say from his observations that there were occasions when the chemists, in his opinion, treated their duties lightly. Among the people who controlled the gas it was known there was a perpetual quarrel between the chemists and Plevin about the admission of air. The shift foremen were also included in the quarrel. When Plevin introduced the tightening of the system and the allocation of responsibility of the technical staff, some of the chemists and foremen received it with mixed feelings, but he would not say they showed any resentment.

Plevin was facing a considerable number of problems when he first arrived at Crowlands. The chemist who was working with witness supported Plevin, but witness could not speak for the others.

Robert Pickavant, a foreman at the works, questioned by Mr. Kennan, said he had been employed at Crowlands 24 years. He remembered the time the new testing room was put in use. On one occasion prior to this Clegg was at the works and at the same time the Gas Examiner was making his test.

"I was on the No. 1 holder bank," continued witness, "leaning against the rails. I was waiting for the Gas Examiner to go so that I could turn the No. 2 holder back on the town and turn No. 1 off."

Mr. Kennan: Did you, in fact, turn No. 1 holder on yourself? Witness: Yes.

On that occasion did Mr. Clegg come up to you?—He came out to the bank, and so that he should not think I was idling my time I told him I was waiting until the Gas Examiner went so that I could put the No. 2 holder back on the town.

Did Mr. Clegg say anything when you made that statement to him?—No.

Could you give us approximately the date of that occurrence?—Early in 1937.

In the course of your duties had you discovered the presence of H_2S at the meter?—Yes.

Did you come to any conclusion with regard to the purifiers when you discovered it?—Yes; the boxes wanted emptying.

Athletic and Social

Cardiff Employees' Co-Partnership Scheme.

The report of the Co-Partnership Committee of the Cardiff Gas Light and Coke Company for the year ended Dec. 31, 1938, states that a bonus at the rate of 5½% on the wages and salaries of co-partners has been distributed for the year, amounting in total to £6,179, leaving a balance to be carried forward to next year's accounts of £129. Interest amounting to £658 has been credited to co-partners' cash accounts, being an increase of £33 over the previous year. The Savings Account continues to be utilized with appreciation by co-partners, and a total of £2,427 has been deposited during the year—an increase of £214. Stock acquired for co-partners during the year amounted to £2,769 at a cost, including stamp duty, of £3,578, or £129 4s.%.

Chester Co-Partnership Annual Dinner.

Mr. W. J. Caton, Fittings Department Foreman of Chester United Gas Company, was the recipient of a handsome presentation from the staffs at the annual dinner in connexion with the Company's co-partnership scheme, at the Stafford Hotel, on April 10. Mr. Caton has been with the Company for fifty-two years. He received an ovation from his fellow employees, who drank his health with musical honours. The Chairman of the Company (Mr. Richard Farer) presided, and he was accompanied by the Sheriff (Mr. R. Frost), the Vice-Chairman (Mr. William Cullimore), Mr. Laurence M. Synge, Mr. H. Bairstow, Mr. Humphrey Gamon, and Mr. Ambrose Roberts (Directors), Mr. H. Hopkinson (Secretary), and Mr. John H. Noble (Engineer).

The Chairman said the indications were for a most successful year. He wished for nothing better than to be spared to be with them that time next year. All of them wished to show their appreciation of Mr. Caton on the occasion of his retirement. Mr. Caton had been very popular with them all, and they wished to give him a token of their esteem, with their best wishes for a happy retirement.

Mr. Hopkinson, making the presentation, said it spoke a great deal for their respect for Mr. Caton that everybody on the staffs was desirous of expressing in tangible form their feeling of appreciation.

Mr. Caton, returning thanks, wished the Company prosperity.

The Sheriff proposed "The Company, Chairman, and Directors," and began by referring to the great interest his family had taken in their Company for many years. His father was Chairman from 1908 to 1912, and he was followed by another relative, Sir John Frost, who occupied that office until his death in 1935. He understood the Company put in a new plant in 1935, and owing to the demand for more gas, they had to increase that by 50%.

Mr. William Cullimore responded.

Mr. Laurence M. Synge proposed the toast of "The Co-Partners," and recalled that he had been a Director for longer than anyone else, except the Chairman. He knew, therefore, the value of the co-partnership scheme, not only to the co-partners, but to the Company as a whole.

Mr. Noble, responding, said the attitude and response of the employees had been very good. The method of arriving at bonuses for co-partners was an ideal one. The co-partners owned about 4% of the Company's estate.

Mr. T. Lionel Jones proposed "The Artists" in a happy speech.

Presentation to Cheltenham Manager.

A presentation was made on March 31 to Mr. A. E. Derrick, who is retiring after 38 years' service with the Cheltenham and District Gas Company. The presentation, which was made on behalf of the staff by Mr. A. L. Morris, F.I.A.C., Accountant and Commercial Manager, consisted of an armchair, fire-surround, and screen. Mr. Morris spoke of the esteem and affection in which Mr. Derrick was held. Mr. Derrick, returning thanks, said he had seen more of the Company than anyone present. He spoke of the wonderful progress made by the Company, and thanked them for the kindness and consideration they had shown him during his time there.

Trade News

George Wilson Gas Meters, Ltd.

Messrs. George Wilson Gas Meters, Ltd., announce that Mr. D. Jacobs, who has for some years been in charge of their Manchester Branch, has now been appointed area Sales Manager. The firm also notify us that their telephone number has been changed from Coventry 8655 to 88655.

Prevention of Corrosion.

The question of corrosion is a very vexed and largely debated problem which has caused much concern throughout the world. In many cases it is possible to determine precisely what are the most severe or virulent corrosive influences, but two points have to be considered in deciding how to overcome them.

(1) The exclusion of corrosive influences from metallic substances.

(2) The removal of the corrosive influences from the vicinity.

As it is not always possible to effect the latter, the problem revolves around the former. A pipe or cable should therefore be isolated from the cause and a protective should be chosen which has been proved by experience to be the most capable of resisting corrosion, for upon this depends the life of the pipe or cable which may be a few years or a few months. Existing conditions, whether industrial or atmospheric, are such that the best of materials require additional protection of some kind to ensure permanence of service. It is, however, false economy to spend money on a protective which is unreliable or cannot guarantee dependability and permanent efficiency, even if such protective shows a lower outlay in the first place. For real economy of working it is necessary to have real protectives, and to obtain these, expenditure may be higher, yet merited, in obtaining the best form of protection.

A real and proved remedy, claim Messrs. Clough (Croydon), Ltd.—a little more expensive it is true—is the application of a rubber wax compound such as "Suprax," which they supply, which consists of the best quality rubber mixed with non-corrosive waxes and fillers worked together into a homogeneous mass. It can be extruded on to the pipes or cables, having no seams or joints whatsoever, and although having a rubber base, no vulcanization is necesasry as the mixture contains no sulphur, which, under electrolytic action in a damp or corrosive situation, itself becomes a corrosive agent. Rubber wax compound, they say, has been proved thoroughly effective where other so-called remedies have failed, and in consequence is used and specified by Government Departments and Corporations for cables which are to be installed in difficult situations. A properly constituted rubber wax compound is waterproof and acid resisting and in itself non-corrodible and non-absorbent, having a very high dielectric strength. The physical and electrical characteristics of "Suprax" are as follows:

Tensile strength.	805 lb. per sq.in. on the original cross-section. 2,850 lb. per sq.in. on the ultimate cross-section. determined on ring test pieces 4 m.m. square section.
Softening point.	154° to 173° F.

The softening point was determined on thin sheet fixed at the end of a glass tube containing a known weight of mercury, and gradually heating in a water bath. The initial softening point is taken when the material begins to sag, and the final when the mercury breaks through the sheet.

Cracking point. About 5° below zero.
Electrical characteristics—

1. Dielectric constant 3.2 (D.C.) at air temperature.
2. Restivity $1{\cdot}5 \times 10^{15}$ ohms/c.m. at 75° F.
3. Power factor approximately 0·003 at Audio frequencies.

All the above figures are actual determinations on a sample of current material.

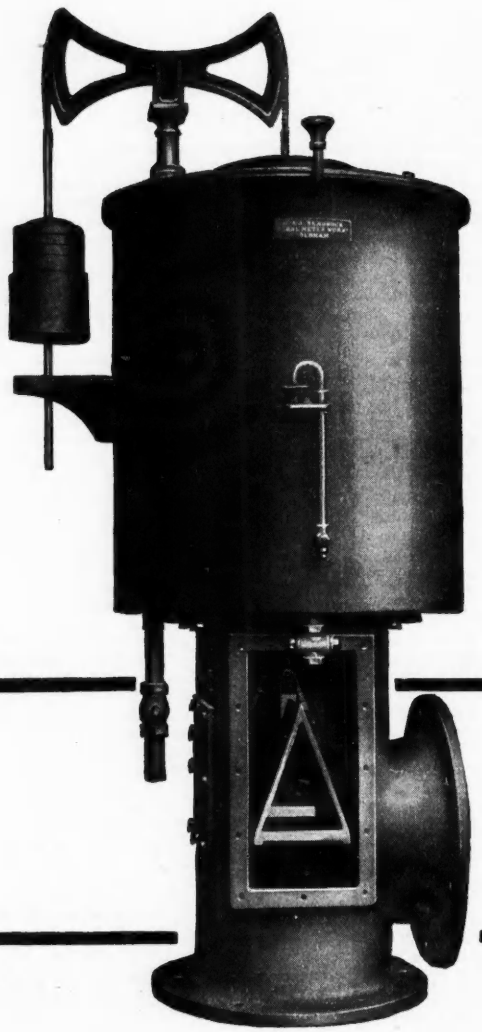
Rubber wax compound made to a softened form has been specially developed as a sealing and insulating medium for joints in cables, &c., as a box compound and for similar purposes. It has the advantages of being quite plastic and workable at hand temperatures, thereby overcoming the difficulties met in the use of ordinary thermoplastic compounds which require heat for their application, remaining always homogeneous and plastic. When applied to bare strands and the ends of cables it overcomes osmosis and moisture troubles, and protects generally against climatic conditions, moisture creepage, and corrosion, having a dielectric value of 150 volts per mil. It can be used for sealing and separating joints in metal to prevent noise and rattle, and to overcome friction between metal and such like.

Fitted as extensions to mudguards in the form of mudflaps, rubber wax sheets catch all the mud and extraneous matters thrown up by the rotation of wheels, thereby affording adequate protection to oncoming vehicles, and fitted at the bottom of the front mudguards protect the undercarriage of lorries and motor cars, thus preventing corrosion, rust, and punctures.

Perfect Boiler Feed Water
from any water supply
equivalent to
DISTILLED
WATER
WITHOUT
DISTILLATION
•
Full facts, details of running costs and description of simple methods of operation can be obtained from the
Permutit Company Ltd.
Permutit House, Gunnersbury Av., London, W.4

Braddock's are Best

RETORT-HOUSE GOVERNORS



Braddock's Patent Retort House Governors are unsurpassed for general excellence.

Especially desirable for use with vertical retorts.

Extremely Sensitive.

Detachable side plate enables valve to be easily removed and cleaned without disturbing any other parts.

Hydraulic Distance Control can be fitted if desired.

Particulars and prices upon application.

J. & J. BRADDOCK

(BRANCH OF METERS LTD.)

GLOBE METER WORKS, OLDHAM
Phone MAin (Oldham) 3815/6

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Phone WATerloo 4412

49/51 ABLOW STREET, WOLVERHAMPTON
Phone 23189

Markets and Manufactures

Current Sales of Gas Products

The London Market

April 17.

We give below a note of to-day's prices for Tar Products in the London market:

Pitch, nominal, at about 27s. 6d. per ton f.o.b.

Creosote, about 3½d. to 3¾d.

Refined tar, 3¾d.

Pure toluole, about 2s. 4d.

Pure benzole, about 1s. 9d.

95/160 solvent naphtha, 1s. 7d. to 1s. 8d.

90/160 pyridine, about 11s.

All per gallon naked at makers' works.

The Provinces

April 17.

Crude Gas-Works Tar, 12s. to 17s.

To avoid misunderstanding, it is necessary to state that the above price is not claimed to represent a market value. It is a price worked out from week to week upon a system which has been used for many years as a basis for the fixing of certain contracts for crude tar of varying qualities in different areas.

The average prices of gas-works products during the week were: Pitch—East Coast, 29s. to 30s. f.o.b. West Coast—Manchester, Liverpool, Clyde, 29s. to 30s.* Toluole, naked, North, 1s. 7½d. to 1s. 9d. Coal tar, crude naphtha, in bulk, North 7¾d. to 8¼d. Solvent naphtha, naked, North, 1s. 4½d. to 1s. 5d. Heavy naphtha, North, 1s. 2½d. to 1s. 3d. Creosote, *ex* works, in bulk, North, liquid and salty, 3⅞d. to 4¼d.; low gravity, 4d. to 4¼d. Carbolic acid, 60's, 1s. 7d. to 1s. 10d. Naphthalene, £13 10s. to £16. Salts, 70s. to 75s., bags included. Anthracene, "A" quality, 4½d. to 4¾d. per minimum 40% purely nominal; "B" quality unsaleable. Heavy oil: Unfiltered anthracene oil, min. gr. 1,080, 4¾d. to 4⅞d; filtered anthracene oil, min. gr. 1,080, 5¼d. to 5¾d.; heavy tar oil, gr. less than 1,080, 4¼d. to 4½d.

*** All prices for pitch are now quoted on the basis of f.o.b. In order to arrive at the f.a.s. value at any port it will be necessary to deduct the loading costs and the tolls, whatever they may be.**

Scotland

GLASGOW, *April* 15.

Market is still suffering from lack of confidence on the part of consumers generally. Makers' prices show no material alteration during the week.

Crude gas-works tar.—The actual value is round 30s. to 32s. per ton *ex* works in bulk.

Pitch of vertical quality is offered freely at 20s. to 21s. per ton f.o.b. for export and round 20s. per ton *ex* works in bulk for home trade.

Refined tar.—Competition is practically eliminated in the home market, with prices fixed at 3¾d. to 4d. per gallon. Export business is slow with quotations at about 2¾d. to 3d. per gallon, both into buyers' packages at makers' works.

Creosote oil.—Producers are in a fairly comfortable position despite the lack of new business. To-day's prices can be taken as under: Specification oil, 3½d. to 3¾d. per gallon; low gravity, 4¼d. to 4½d. per gallon; neutral oil, 3¾d. to 4d. per gallon; all *ex* works in bulk.

Cresylic acid.—Very few orders are being placed and prices remain as follows: Pale, 97/99%, 1s. 2d. to 1s. 3d. per gallon; dark, 97/99%, 1s. to 1s. 1d. per gallon; pale, 99/100%, 1s. 4d. to 1s. 7d. per gallon; all *ex* works in buyers' packages.

Crude naphtha continues to command round 5¼d. to 6d. per gallon *ex* works in bulk, according to quality.

Solvent naphtha.—90/160 grade is quoted at 1s. 3½d. to 1s. 4d. per gallon and 90/190 heavy naphtha at about 1s. 1d. to 1s. 1¼d. per gallon.

Motor benzole is 1s. 3d. to 1s. 4d. per gallon.

Pyridine.—90/160 grade is 8s. 6d. to 9s. 6d. per gallon and 90/140 grade is 9s. 6d. to 10s. 6d. per gallon.

Benzole Prices

These are considered to be the market prices for benzole at the present time:

	s.	d.		s.	d.	
Crude benzole..	0	9½	to	0	10	per gall. at works
Motor „ ..	1	3	„	1	3½	„ „ „
90% „ ..	1	4	„	1	4½	„ „ „
Pure „ ..	1	8	„	1	8½	„ „ „

Contracts Advertised To-Day

Boosting Plant.
Bury Gas Department. [p. 182.]

Gasholders.
Cowes Gas Department. [p. 182.]
Llandudno Gas Department. [p. 182.]

Meters.
Southport Gas Department. [p. 182.]

Pipes and Specials.
Southport Gas Department. [p. 182.]

Steam Driven Pump.
Warrington Gas Department. [p. 182.]

Stores.
Southport Gas Department. [p. 182.]

Dividend Announcement

Oriental.—Directors of the Oriental Gas Gas Company have resolved to pay on May 21 an interim dividend at the rate of 3½%, free of income-tax, on account of the year ended June 30 next.

PROTECT WITH

METROTECT

a bituminous paint producing a pleasant satin black finish with highly waterproof and anti-corrosive properties.

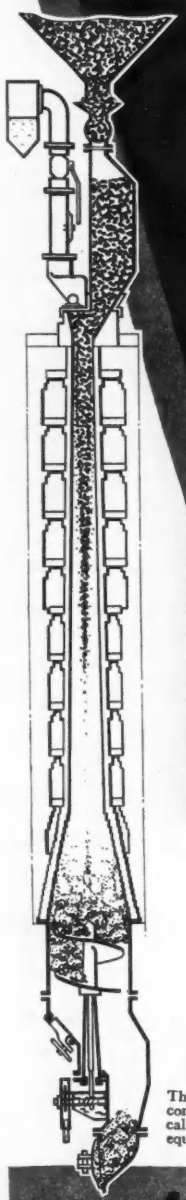
Protects steel-work which is continuously or periodically immersed in water. Does not become brittle on prolonged atmospheric exposure. METROTECT flows freely under the brush and can be applied quickly and without effort even in cold weather.

Prices and further particulars from—

SOUTH METROPOLITAN GAS CO.

PRODUCTS DEPARTMENT,
REGIS HOUSE,
KING WILLIAM STREET,
E.C.4.

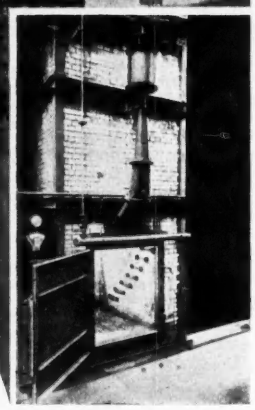
WEST'S



The Glover-West continuous vertical retort and equipment.

Three installations of Glover-West vertical retorts, with coke-grading and waste-heat recovery equipment, at the Cottesloe gasworks of the Johannesburg Municipal Gas Department. and (*below*) step-grate producer equipped with steam-jet air injector to facilitate the burning of small coke and breeze under pressure—a view in the Glover-West vertical retort house at the Meadow Lane works of the Leeds Corporation Gas Department.

Carbonizing Plants



- Increased capacity in relation to ground area covered.
- Output readily adjustable to meet fluctuating demands.
- High yields of gas and coke with low maintenance costs.
- Clean working conditions within the retort house.
- Modern building design and smokeless operation.

WEST'S GAS IMPROVEMENT COMPANY, LTD.
MILES PLATTING, MANCHESTER 10 & COLUMBIA HOUSE, ALDWYCH, W.C.2

Glover-West Vertical Retorts
AND WESTVERTICAL CARBONIZING CHAMBERS

434 PLANTS BUILT OR ORDERED IN 24 COUNTRIES

GAS STOCKS AND SHARES

Business on the Stock Exchange last week was again on a very small scale. A certain amount of liquidation was in evidence with buyers few and far between and, with jobbers on the defensive, prices were marked down all round. Mr. Roosevelt's dramatic intervention in the European situation caused a profound sensation at the end of the week, but until the result of the appeal is known it is not anticipated that any marked change will take place in the existing conditions on the Stock Exchange.

The Gas market suffered with the rest. The volume of business was almost negligible and a number of leading stocks depreciated. A feature was the sharp drop of 6½ points in Portsmouth and Gosport consolidated to 150, and the fall of 6 to 90 in South Metropolitan ordinary. Imperial Continental declined 5½ to 110, and a parcel of this stock is available at 112 to yield nearly 9%. It is also noted that £5,000 Commercial ordinary is on offer at 60, to give a return of 7½% on a 4½% dividend basis. Gas Light units reacted and closed 6d. lower at par. In view of the weakness on the London Exchange, it is interesting to note that on the Provincial Exchanges several ordinary stocks have appreciated over the past two weeks, including Bristol, Hartlepool, and Sheffield. Nominal quotations in the Supplementary List remained unchanged.

The net revenue of the South-Western Gas and Water Corporation for the year 1938, after providing for income-tax, amounted to £22,819, compared with £22,049 for the previous account which covered a period of nine months—the balance forward remaining practically unchanged at £1,689. The Directors recommend a final dividend of 3%, making 5% for the year. The report states that the results of the constituent Companies for the past year were adversely affected by increases in the cost of coal. The ordinary shares are available at round about 17s. *ex* div., to yield £5 17s. 9d.% A report of the Annual Meeting appears elsewhere in this issue.

Official Quotations on the London Stock Exchange

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations April 14.	Rise or Fall on Week.
1,767,439	Mar. 6	8	8	Alliance & Dublin Ord. ...	130—140	...
374,000	Dec. 19	4	4	Do. 4 p.c. Deb. ...	93—98	...
734,733	Nov. 7	5	5	Asscd. Gas & Water U'd'ts Ord.	17/—19/–	...
500,000	,,	4⅛	4⅛	Do. 4⅛ p.c. Red. Cum. Pref.	19/—21/–	...
444,389	,,	4	4	Do. 4 p.c. Red. Cum. Pref.	19/—21/–	...
296,523	,,	4	4	Do. 4 p.c. Irred. Cum. Pref.	16/—18/–	...
500,000	Mar. 6	3½	3½	Do. 3½ p.c. Red. Deb. ...	92—97	...
560,070	Feb. 20	7	7	Barnet Ord. 7 p.c.	155—160	...
300,000	Apl. 6	1/4⅜	1/9⅜	Bombay, Ltd.	19/—21/–	—/6
181,185	Feb. 20	9½	9½	Bournemouth sliding scale ...	192—202	...
690,526	,,	7	7	Do. 7 p.c. max. ...	153—158	—2
493,960	,,	6	6	Do. 6 p.c. Pref. ...	128—133	...
50,000	Dec. 19	3	3	Do. 3 p.c. Deb. ...	73—78	...
362,025	,,	4	4	Do. 4 p.c. Deb. ...	95—100	...
335,000	,,	5	5	Do. 5 p.c. Deb. ...	113—118	...
357,900	Feb. 20	7½	7½	Brighton, &c., 6 p.c. Con. ...	141—146	...
659,955	,,	6½	6½	Do. 5 p.c. Con. ...	124—129	...
205,500	,,	6	6	Do. 6 p.c. 'B' Pref.	123—128	...
855,000	Mar. 20	7	8	British Ord.	128—133	...
100,000	Dec. 19	7	7	Do. 7 p.c. Pref.	138—143	...
350,000	,,	5⅛	5⅛	Do. 5⅛ p.c. 'B' Cum. Pref.	112—117	...
120,000	,,	4	4	Do. 4 p.c. Red. Deb. ...	94—59	...
450,000	,,	5	5	Do. 5 p.c. Red. Deb. ...	100—105	...
450,000	,,	3½	3½	Do. 3½ p.c. Red. Deb. ...	90—95	...
100,000	22 May '33	6	4	Cape Town, Ltd.	1—2	...
100,000	6 Nov. '33	4½	4½	Do. 4½ p.c. Pref. ...	1—2	...
150,000	Dec. 19	4½	4½	Do. 4½ p.c. Deb. ...	60—70	...
626,860	Feb. 6	6	6	Cardiff Con. Ord.	115—120	...
237,860	Dec. 19	5	5	Do. 5 p.c. Red. Deb. ...	103—108	...
98,936	Mar. 20	2/–	2/–	Colombo Ord.	1⅞—1¾	...
24,510	,,	1/4⅛	1/4⅛	Do. 7 p.c. Pref. ...	22/—24/–	...
739,453	Mar. 20	–/11·48	–/11·48	Colonial Gas Assn. Ltd. Ord.	16/—18/–	...
296,144	,,	1/3·30	1/3·30	Do. 8 p.c. Pref. ...	23/—25/–	...
1,775,005	Jan. 23	5	4	Commercial Ord.	50—60	...
140,000	Feb. 6	§13/4	4	Do. 4 p.c. Red. Pref. ...	95—100	...
620,000	Dec. 5	3	3	Do. 3 p.c. Deb. ...	62—67	...
286,344	Feb. 20	5	5	Do. 5 p.c. Deb. ...	108—113	...
200,000	,,	6⅔	4	Do. 3½ p.c. Red. Deb. ...	95—100	...
807,560	Feb. 20	7	7	Croydon sliding scale ...	127—132	...
644,590	,,	5	5	Do. max. div.	95—100	...
620,385	Dec. 19	5	5	Do. 5 p.c. Deb. ...	110—115	...
239,000	Feb. 6	5	5	East Hull Ord. 5 p.c.	93—98	...
187,215	Feb. 6	6	6	East Surrey Ord. 5 p.c. ...	113—118	...
176,211	Dec. 5	5	5	Do. 5 p.c. Deb. ...	110—115	...
250,000	Nov. 7	8	4	Gas Consolidation Ord. 'B' ...	19/—21/–	...
250,000	,,	4	4	Do. 4 p.c. Red. Cum. Pref.	17/6—19/6†	...
19,189,963	Feb. 6	5⅔	5⅔	Gas Light & Coke Ord. ...	19/6—20/6a	—/6
2,600,000	,,	3⅓	3⅓	Do. 3½ p.c. max. ...	70—74	—⅛
4,477,106	,,	4	4	Do. 4 p.c. Con. Pref. ...	92—97	—⅛
2,993,000	Jan. 9	3⅜	3⅜	Do. 3⅜ p.c. Red. Pref. ...	93—98	—1
8,602,497	Nov. 21	3	3	Do. 3 p.c. Con. Deb. ...	70—75	—1
3,642,770	,,	5	5	Do. 5 p.c. Red. Deb. ...	106—110	—1
3,500,000	,,	4½	4½	Do. 4½ p.c. Red. Deb. ...	103—108	—1½
700,000	Mar. 6	3½	3½	Do. 3½ p.c. Red. Deb. ...	91—96	—1
270,466	Feb. 20	6	6	Harrogate New Cons. ...	115—120	...
157,500	Mar. 20	‡1/–	‡1/–	Hong Kong and China Ord. ...	£—£	...
213,200	Feb. 6	5⅛	6	Hornsey Con. 3½ p.c. ...	97—102	...
5,600,000	Oct. 24	12	8	Imperial Continental Cap. ...	105—115	—5½
172,810	Jan. 23	3½	3½	Do. 3½ p.c. Red. Deb. ...	88—93	...
235,242	Mar. 6	8½	8½	Lea Bridge 5 p.c. Ord. ...	145—155	—3
63,480	Dec. 19	3	3	Maidstone 3 p.c. Deb. ...	68—73	...
45,000	Nov. 21	†10	†10	Malta & Mediterranean ... Metropolitan (of Melbourne)	130—135	...
392,000	Apl. 6	5½	5½	5½ p.c. Red. Deb.	98—103*	...
231,977	Feb. 20	5	5	M.S. Utility 'C' Cons. ...	96—101	...
968,658	,,	4	4	Do. 4 p.c. Cons. Pref. ...	90—95	...
390,076	Dec. 19	4	4	M.S. Utility 4 p.c. Deb. ...	92—97	...
148,955	,,	5	5	Do. 5 p.c. Deb. ...	110—115	...
125,000	Jan. 3	3½	3½	Do. 3½ p.c. Red. Bds.	94—97	...
675,000	Nov. 21	†6	†6	Montevideo, Ltd.	70—75	...
250,000	Mar. 6	7½	7½	North Middlesex 6 p.c. Con.	140—145	...
396,160	Feb. 6	5	5	Northampton 5 p.c. max. ...	105—110	...
300,000	Oct. 24	†7	†9	Oriental, Ltd.	145—150	...
468,537	Dec. 5	8	7½	Plymouth & Stonehouse 5 p.c.	130—140	...
621,667	Feb. 20	8½	8½	Portsmouth & Gosport Cons.	145—155	—6½
241,446	,,	5	5	Do. 5 p.c. max. ...	98—103	...
73,350	,,	5	5	Do. 5 p.c. Pref. ...	103—108	...
75,000	,,	4	4	Do. 4 p.c. Pref. ...	88—93	...
114,000	Feb. 6	5	5	Preston 5 p.c. Pref.	105—110	...
247,966	Dec. 19	4	4	Primitiva 4 p.c. Cons. Deb. ...	96—101	...
625,959	Jan. 9	4	4	Do. 4 p.c. Red. Deb. ...	94—99	...
15,000	Mar. 6	6	6	San Paulo 6 p.c. Cum. Pref. ...	8—9	...
441,275	Sept. 19	1/1⅛	1/1⅛	Severn Val. Gas Cor. Ld. Ord.	20/6—22/6	...
460,810	Mar. 20	–/10⅜	–/10⅜	,, ,, 4½ p.c. Cum. Pref.	19/—21/–	...
133,201	Mar. 6	8½	5	Shrewsbury 5 p.c. Ord. ...	141—146	...
9,000	June 3	4	‡4	South African Ord.	4⅛—5⅛	...
1,371,752	Aug. 22	1/2⅛	1/2⅛	South East'n Gas Cn. Ld. Ord.	21/—23/–	—/6
871,636	Mar. 6	–/10⅞	–/10⅞	Do. 4½ p.c. Red. Cum. Pref.	19/—21/–	...
498,818	,,	4	4	Do. 4 p.c. Cum. Pref. ...	17/—19/–	...
450,000	Feb. 6	4	4	Do. 4 p.c. Deb.	96—101	...
150,000	,,	3½	3½	Do. 3½ p.c. Red. Deb. ...	93—98	...
6,709,895	Feb. 6	5	6	South Met. Ord.	85—95	—6
1,135,812	,,	6	6	Do. 6 p.c. Irred. Pref. ...	122—127	—1
850,000	,,	4	4	Do. 4 p.c. Irred. Pref. ...	90—95	...
1,895,445	Dec. 19	3	3	Do. 3 p.c. Deb.	71—76	...
1,000,000	Jan. 9	5	5	Do. 5 p.c. Red. Deb. ...	105—109	...
600,000	,,	§31/–	3⅜	Do. 3⅜ p.c. Red. Deb. ...	98—101	...
1,543,795	Jan. 23	6	6	South Suburban Ord. 5 p.c. ...	105—110	—2
512,825	,,	5	5	Do. 5 p.c. Pref.	103—108	...
500,000	,,	4	4	Do. 4 p.c. Pref.	90—95	...
250,000	,,	3⅜	3⅜	Do. 3⅜ p.c. Red. Pref. ...	91—96	...
888,587	Dec. 5	5	5	Do. 5 p.c. Deb.	108—113	—1
250,000	,,	4	4	Do. 4 p.c. Deb.	93—98	...
200,000	Feb. 6	3½	3½	Do. 3½ p.c. Red. Deb. ...	90—95	...
427,859	Apl. 6	9⅛	1/2⅝	S. Western Gas & Water Ord.	15/6—17/6*	...
160,523	Apl. 6	–/10⅜	–/10⅜	Do. 4½ p.c. Red. Cum. Pf.	18/6—20/6*	...
110,000	Dec. 19	4	4	Do. 4 p.c. Red. Deb. ...	95—100	...
750,541	Feb. 6	5	5⅛	Southampton Ord. 5 p.c. ...	104—109	...
148,836	Dec. 19	4	4	Do. 4 p.c. Deb.	93—98	...
350,000	Feb. 6	5⅛	5⅛	Swansea 5½ p.c. Red. Pref. ...	104—109	—1
200,000	Dec. 19	3⅛	3⅛	Do. 3½ p.c. Red. Deb. ...	92—97	...
1,076,490	Feb. 20	6⅔	6⅔	Tottenham and District Ord.	120—125	...
409,835	,,	5⅛	5⅛	Do. 5½ p.c. Pref.	113—118	...
62,235	,,	5	5	Do. 5 p.c. Pref.	103—108	...
453,380	Dec. 5	4	4	Do. 4 p.c. Deb.	90—95	...
85,701	Jan. 9	6	6	Tuscan 6 p.c. Red. Deb. ...	95—100	...
1,131,550	Aug. 22	6	4	U. Kingdom Gas Cor. Ord. ...	17/9—18/9	—/3
1,051,280	Nov. 7	4⅛	4⅛	Do. 4½ p.c. 1st Cum. Pref.	18/6—20/6	—/6
762,241	,,	4	4	Do. 4 p.c. 1st Red. Cum. Pf.	18/6—20/6	—/6
745,263	Dec. 19	4⅛	4⅛	Do. 4½ p.c. 2nd Non-Cum. Pf.	15/6—17/6	...
1,066,186	Mar. 6	3⅛	3⅛	Do. 3½ p.c. Red. Deb. ...	94—98	—½
378,106	Mar. 6	7	7	Uxbridge, &c., 5 p.c. ...	122—127	...
133,010	,,	5	5	Do. 5 p.c. Pref. ...	102—107	...
1,371,138	Jan. 23	7	7	Wandsworth Consolidated ...	120—125	...
2,525,768	,,	4	4	Do. 4 p.c. Pref....	89—94	...
1,343,964	Dec. 19	5	5	Do. 5 p.c. Deb. ...	108—113	—1
382,745	,,	4	4	Do. 4 p.c. Deb. ...	92—97	...
400,000	,,	§25/–	3⅜	Do. 3⅜ p.c. Red. Deb. ...	96—101	...
558,342	Feb. 6	6⅔	6⅔	Watford and St. Albans Ord.	127—132	...
200,000	,,	5	5	Do. 5 p.c. Pref. ...	103—108	...
200,000	,,	5⅛	5⅛	Do. 5⅛ p.c. Pref. ...	110—115	...
200,000	,,	§16/8	4	Do. 4 p.c. Red. Pref. ...	95—100	...
200,000	Dec. 19	4	4	Do. 4 p.c. Red. Deb. ...	93—98	...
200,000	,,	3⅛	3⅛	Do. 3⅛ p.c. Red. Deb. ...	92—97	...

a.—The quotation is per £1 of stock. * Ex. div. † Paid free of income-tax. ‡ For year. § Actual.

Supplementary List and Provincial Exchanges overleaf.

STOCK AND SHARE LIST—Cont.

Supplementary List, not Officially Quoted, London

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Nominal Quotations April 14.	Rise or Fall on Week.
202,152	Mar. 20	5	5	Ascot Ord.	99—104	...
128,182	Dec. 19	5	5	Do. 5 p.c. Pref.	102—107	...
31,035	Mar. 20	–/4⅛	–/4⅛	Associated Utilities 4 p.c. Pref.	15/—17/-	...
100,000	Dec. 19	3½	3½	Do. 3½ p.c. Red. Deb. ...	95—100	...
17,000	Feb. 20	8	8	Bognor Orig. Ord. 'A' ...	152—162	...
62,210	,,	8	8	Do. New Addl. 'A' ...	152—162	...
87,160	,,	7	7	Do. New 7 p.c. max. ...	142—152	...
37,440	Feb. 6	10	10	Cam. Univ. & Town 10 p.c. max.	183—193	...
125,970	,,	7	7	Do. 7 p.c. max.	131—136	...
39,025	,,	5	5	Do. 5 p.c. max.	95—100	...
96,410	Feb. 6	4½	4½	Cardiff 4½ p.c. Pref.	93—98	...
150,000	Feb. 20	4	4	Croydon 4 p.c. Pref.	91—96	...
130 000	Dec. 19	4	4	Do. 4 p.c. Deb.	93—98	...
65,000	Mar. 6	7¼	7¼	Eastbourne 'A' 5 p.c. ...	122—132	...
198,000	,,	6	6⅛	Do. 'B' 3½ p.c.	105—115	...
112,312	,,	5	5	Do. 5 p.c. Pref.	102—107	...
130,000	Dec. 19	5	5	Do. 5 p.c. Deb.	108—113	...
24,000	Feb. 20	8½	8½	Great Yarmouth 8½ p.c. max.	30—35	...
59,400	,,	7½	7½	Do 7½ p.c. max.	27—32	...
51,160	Dec. 5	5½	5½	Do. 5½ p.c. Deb.	117—122	...
152,600	Feb. 20	8	9	Guildford Cons.	160—165	...
54,055	,,	5	5	Do. 5 p.c. Pref.	102—107	...
68,250	Dec. 19	5	5	Do. 5 p.c. Deb.	109—114	...
156,600	Feb. 20	7½	7½	Hampton Court Cons. ...	120—125	...
80,000	Mar. 6	4	4	Lea Bridge 4 p.c. Pref. ...	90—95	...
60,000	,,	6	6	Do. 6 p.c. Pref.	120—125	...
94,876	Dec. 5	4	4	Do. 4 p.c. Deb.	90—95	...
73,620	Mar. 6	8⅛	8⅛	Luton Cons. 'A'	150—160	...
107,960	Mar. 20	4	5⅛	Mid Kent Ord.	8½—9½	...
230,940	Feb. 6	10	10	Oxford & District Ord. ...	192—197	...
47,112	,,	5	5	Do. 5 p.c. Pref.	102—107	...
50,000	,,	6	6	Do. 6 p.c. Red. Pref. ...	108—113	...
126,193	Nov. 7	7⅛	7⅛	Peterborough Ord.	137—142	...
64,990	Mar. 6	7⅛	7⅛	Redditch Ord....	115—125	...
166,850	Feb. 6	8	8	Romford Ord.	137—142	...
60,000	,,	4	4	Do. 4 p.c. Pref.	97—102	...
44,000	Mar. 20	5	5	Do. 5 p.c. Deb.	108—113	...
25,570	Feb. 6	5⅛	5⅛	Rugby 5⅛ p.c. Pref. ...	118—123	...
25,000	,,	6	6	Do. 6 p.c. Red. Pref. ...	103—108	...
42,750	Dec. 5	5⅛	5⅛	Do. 5⅛ p.c. Deb.	117—122	...
110,950	Feb. 20	8	8	Ryde Ord.	137—147	...
270,086	Mar. 20	7	7	Slough Ord.	126—131	...
21,000	Dec. 19	5	5	Do. 5 p.c. Deb.	107—112	...
28,872	Nov. 7	5⅛	5⅛	S. Midland Gas Cpn. Ltd. Ord.	17/—19/-	...
28,866	Mar. 6	4⅛	4⅛	Do. 4⅛ p.c. Red. Cum. Pref.	17/—19/-	...
117,228	Feb. 20	5	7	Swindon Cons.	100—105	...
60,425	Dec. 5	5	5	Do. 5 p.c. Deb.	108—113	...
64,380	Dec. 19	5	5	Torquay & Paignton 5 p.c. Pref.	105—110	...
130,000	Feb. 6	5	8	Wakefield Ord.	116—121	...
81,650	,,	5	5	Do. 5 p.c. max.	92—97	...
82,000	Jan. 23	6	6	Weymouth Ord.	101—106	...
98,384	Feb. 6	6	6	Wolverhampton 6 p.c. Pref.	115—120	...
160,000	Dec. 19	5⅛	5⅛	Do. 5⅛ p.c. Rd. Db.	103—108	...
90,000	Dec. 19	5	5	York 5 p.c. Red. Deb. ...	102—107	...
133,640	Feb. 20	6½	6½	Yorktown (Cam.) 5 p.c. Cons.	115—120	...
120,000	,,	5	5	Do. 5 p.c. Pref.	102—107	...
35,000	Dec. 5	5⅛	5⅛	Do. 5⅛ p.c. Deb.	112—117	...

BRISTOL EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations April 14.	Rise or Fall Since Mar. 31.
347,756	Feb. 6	5	6	Bath Cons.	115—117	...
1,667,250	Feb. 6	5	5	Bristol, 5 p.c. max.	107—110	+1
120,420	Dec. 19	4	4	Do. 1st 4 p.c. Deb. ...	98—101	...
415,250	,,	4	4	Do. 2nd 4 p.c. Deb. ...	98—101	...
328,790	,,	5	5	Do. 5 p.c. Deb.	115—118	...
274,000	Feb. 20	5	5	Newport (Mon.) 5 p.c. max. ...	95—97	...
13,200	Mar. 20	7	8⅛	Pontyp'l Gas & W. 10 p.c. 'A'	12⅛—13½*	...
13,600	,,	6	5	Do. 7 p.c. 'B' ...	11¼—12*	...
40,000	,,	6	5	Do. 7 p.c. 'C' ...	11¼—12*	...
140,778	Feb. 6	5	5	Weston-super-Mare Cons. ...	103½—105½	...
64,338	Dec. 19	4	4	Do. 4 p.c. Deb. ...	98—101	...
33,340	,,	7⅛	7⅛	Do. 7⅛ p.c. Deb. ...	149—152	...

LIVERPOOL EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations April 14.	Rise or Fall Since Mar. 31.
157,150	Feb. 6	5	6½	Chester 5 p.c. Ord.	107—110	...
92,500	Dec. 19	4	4	Do. 4 p.c. Pref.	95—99	...
36,430	,,	3½	3½	Do. 3½ p.c. Deb.	87—90	...
41,890	,,	4	4	Do. 4 p.c. Red. Deb ...	97—101	...
2,167,410	Feb. 20	6	6	Liverpool 5 p.c. Ord.	118—120	−2
245,500	Dec. 19	5	5	Do. 5 p.c. Red. Pref. ...	100—105	...
306,083	Jan. 23	4	4	Do. 4 p.c. Deb.... ...	100—102	...
106,280	Feb. 6	10	10	Preston 'A' 10 p.c.	177—187	...
188,219	,,	7	7	Do. 'B' 7 p.c.	129—139	...

NEWCASTLE EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations April 14.	Rise or Fall Since Mar. 31.
122,577	Feb. 20	8	8	Blyth 5 p.c. Ord.	157½—158¾	...
732,000	Feb. 20	3	3	Hartlepool G. & W. Cn. & New	69—71	+2
2,061,315	Feb. 6	5	5⅛	Newcastle & Gateshead Con.	21/3–21/9a	−1/3
682,856	,,	4	4	Do. 4 p.c. Pref. ...	99—101	...
776,706	Dec. 19	3½	3½	Do. 3½ p.c. Deb. ...	88—89	...
277,285	Oct. 24	5	5	Do. 5 p.c. Deb. '43 ...	104—106	+¾
332,351	Feb. 6	6	6	Sunderland 6 p.c. max. ...	132½—134½	...

NOTTINGHAM EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations April 14.	Rise or Fall Since Mar. 31.
542,270	Feb. 6	6	9	Derby Con.	132—137	...
55,000	Dec. 19	4	4	Do. 4 p.c. Deb.	100—105	...
20,000	Dec. 19	5	5	Long Eaton 5 p.c. Pref. ...	10—12	...
80,000	,,	5	5	Do. 5 p.c. Deb. ...	105—110	...

SHEFFIELD EXCHANGE

Issue. £	When ex-Dividend.	Dividends. Prev. Hf. Yr. % p.a.	Dividends. Last Hf. Yr. % p.a.	NAME.	Quotations April 14.	Rise or Fall Since Mar. 31.
10,000	Feb. 6	10	10	Great Grimsby 'A' Ord. ...	180—190	...
6,500	,,	10	10	Do. 'B' Ord. ...	180—190	...
79,000	,,	10	10	Do. 'C' Ord. ...	175—185	...
1,806,339	Feb. 20	6½	6½	Sheffield Cons.	136—139	+1
95,000	Dec. 19	4	4	Do. 4 p.c. Deb.	100—102	...

a The quotation is per £1 of Stock.
* Ex div.

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